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# PHASE 2 RESPONSE PLAN IMPLEMENTATION REPORT

## FORMER AGRICULTURAL PARK
7020 Crest Avenue
Riverside, California

*Prepared for*

Friends of the Riverside Airport, LLC

8175 Limonite Avenue, Suite E
Jurupa Valley, California 92509

*Prepared by*

TRC

Irvine, California

March 31, 2014

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## EXECUTIVE SUMMARY

This report presents a summary of remedial excavation activities conducted to remove and dispose of soil containing compounds of concern, including polychlorinated biphenyls (PCBs), from the former City of Riverside Agricultural Park (the Site) located at 7020 Crest Avenue in Riverside, California. The work was performed in accordance with the *Revised Response Plan, Excavation of Soils Containing PCBs* (FREY, 2006a), and was considered to be Phase 2 of the project to remove soil with concentrations exceeding residential cleanup levels. Phase 1 of the project (removal of PCB-impacted soil to a target level of 50 milligrams per kilogram [mg/kg]) was conducted in 2009. The Department of Toxic Substances Control (DTSC) currently provides regulatory oversight for this project.

The purpose of the remedial excavation was to prepare the Site for single-family residential development. The goal of this phase of work was to excavate, remove, and properly dispose of soils containing PCB concentrations in excess of the United States Environmental Protection Agency (USEPA) residential regional screening level (RSL) of 0.22 mg/kg from locations determined by previous Site investigation efforts. Soil containing elevated metals and dioxin/furan concentrations was also removed as part of these remedial excavation activities.

Between July 2013 and January 2014, impacted soil was removed from the Site and confirmation soil sampling was conducted to verify removal of the impacted soil. Excavation areas were concluded only after verifying that contaminant concentrations were less than their respective screening levels or cleanup goals. Specific details are as follows:

- During excavation of PCB-impacted soil, a total of ~995 confirmation soil samples were collected to monitor progress and verify removal of the impacted soil. At the conclusion of excavation activities, all final confirmation samples were below 0.22 mg/kg for PCBs.
- During the 2009 Phase 1 removal action, soil samples collected from the sample location identified as B-1 were determined to have metals concentrations above background levels, including elevated levels of total chromium. FRA agreed to re-test the B-1 area for hexavalent chromium and total metals during Phase 2. Additional soil was removed from the B-1 location and was re-tested for hexavalent chromium and total metals. Although some metals were found to exceed background concentrations in the five samples collected, the levels were significantly below USEPA residential RSLs, with the exception of arsenic. However, arsenic was only detected in one sample at a concentration below the established background level (5.6 mg/kg). With respect to hexavalent chromium, a background concentration had not been established during previous Site investigations. Hexavalent chromium was detected in all five samples at a maximum of 0.288 mg/kg, which is below the residential RSL. The B-1 area was co-located with a larger, planned PCB excavation (CS382). Following the collection of samples from the B-1 area, the larger area encompassing B-1 was excavated to 7 fbg. The soil represented by the five samples from the B-1 area was subsequently removed.

- Thirteen dioxin/furan-impacted locations identified during Phase 1 activities were addressed by conducting addition excavation and confirmation sampling. Of the 50 confirmation samples collected, 17 were above the health-based screening level (4.5 picograms per gram [pg/g]). Consequently, additional soil was removed from these locations and more confirmation samples were collected. This procedure was repeated until all final confirmation sample results were below 4.5 pg/g.

PCB-impacted soil (165,226.64 tons) generated during excavation activities was characterized as a non-hazardous waste and transported to the Waste Management, Inc. Azusa Land Reclamation facility in Azusa, California, for recycling. Additional materials that were removed from the Site included clean soil (30,782 tons), concrete (4,481.37 tons), green waste (422.26 tons), and asbestos-cement pipe (50.82 tons).

Based on the findings of confirmation soil sampling activities conducted upon completion of Phase 2 remedial excavation in the identified areas onsite, it appears that soil impacts in excess of specified cleanup levels (includes PCBs, metals, and dioxins/furans) have been effectively removed. Furthermore, findings and conclusions of the post-remediation human health risk assessment (HHRA) presented herein indicate that residual soil concentrations do not pose a risk to future residential development of the property. As a result of these findings, TRC requests environmental case closure for this Site.

# 1.0 INTRODUCTION

This report presents a summary of remedial excavation activities conducted to remove and dispose of soil containing compounds of concern, including polychlorinated biphenyls (PCBs), from the former City of Riverside Agricultural Park (the Site) located at 7020 Crest Avenue in Riverside, California (see Figure 1). The work described herein was performed to satisfy the requirements of the California Land Reuse and Revitalization Act of 2004, enacted by Assembly Bill No. 389. The work was performed in accordance with the *Revised Response Plan, Excavation of Soils Containing PCBs* (FREY, 2006a), and was considered to be Phase 2 of the project to remove soil with concentrations exceeding residential cleanup levels. Phase 1 of the project (removal of PCB-impacted soil to a target level of 50 milligrams per kilogram [mg/kg]) was conducted in 2009. The Department of Toxic Substances Control (DTSC) currently provides regulatory oversight for this project.

# 2.0 BACKGROUND

## 2.1 SITE HISTORY

The Site was reportedly first developed as a sewage treatment plant by the United States Army in 1942. The sewage treatment plant was constructed to handle wastewater generated at Camp Anza, which operated under the supervision of the United States Army until approximately 1947 (EarthSafe, 2003). Anza Realty Company operated the sewage treatment plant from approximately 1947 to 1953. The Anza Realty Company, later known as the Arlington Utility Company, operated the sewage treatment plant from 1953 to 1962. The City of Riverside operated the sewage treatment plant from 1962 to 1965. The sewage treatment plant accepted waste from industrial, commercial, and residential customers. The treatment plant was decommissioned in 1965 (Geomatrix, 2004). The City continuously owned the Site from 1962 through May 1, 2006. The Site is currently owned by the Friends of the Riverside Airport, LLC (FRA).

The sewage treatment plant consisted of multiple aboveground concrete tanks and small buildings in the west-central section of the Site. The concrete tanks included a primary and secondary clarifier, a primary and secondary biofilter, and a digester. The primary and secondary clarifiers were approximately 66 feet in diameter and approximately 9 feet in height. The upper 2 feet of each clarifier was located above the ground surface, with the remainder located below the ground surface. The primary and secondary biofilters were each approximately 72 feet in diameter and approximately 10 feet in height. The upper 6 feet of each biofilter extended above the ground surface, with the remainder below the ground surface.

The digester was a dual-chamber concrete tank with an approximate 40-foot diameter. The height of the digester was approximately 16 feet. Approximately 10 feet of the digester was located below ground. The digester had a conical-shaped bottom with 8-inch thick concrete walls. The upper 9 feet of the digester represented one chamber while the second chamber (approximately 7 feet in height) was located below grade in the conical-shaped portion of the digester. Additional equipment in this area included, but was not limited to, numerous pipes, pumps, valves, screens and chlorination tanks.

Sewage containing a high percentage of solids was directed to numerous sludge settling beds located north and northwest of the aboveground tanks. The sludge settling beds were oriented from north to south. Dimensions of the sludge settling beds ranged from 60 feet to 130 feet in length and from 25 feet to 60 feet in width.

Two large oval-shaped basins were located due east and southeast of the aboveground storage tanks. Treated wastewater was directed into these two basins prior to discharge into the wash located on the east side of the Site. The City of Riverside reportedly used the two oval-shaped basins as brine ponds in the early 1970s. The brine ponds accepted wastewater from nearby water softening businesses and other discharges of liquids containing high total dissolved solids (EarthSafe, 2003). The overall Site plan, including the two oval-shaped basins, is shown on Figure 2.

Various activities have been conducted at the Site since 1965, even though the Site has remained undeveloped. The City of Riverside has disposed of excavated sidewalks and roadways along the western and southern banks of the drainage on the eastern and northern portions of the Site. This refuse was not associated with sewer plant operations. Specific dates for the disposal of the concrete could not be obtained. Three permitted livestock shows were held in the area of the former pole barn. The livestock shows were conducted as 3-day events between 1981 and 1986. A bicycle motocross track was constructed west of the former pole barn in the area of the former sludge beds. Motocross activities were conducted under permit in this location between August 1997 and January 2002 (Geomatrix, 2004).

## 2.2 SITE DESCRIPTION

### 2.2.1 <u>Physiographic Setting</u>

The Site consists of approximately 62 acres of undeveloped land. The assessors parcel numbers for the Site are 155-040-004 and 155-040-005. The Site is relatively flat with elevations decreasing to the north.

A primarily dry wash containing brush and trees runs from south to north along the western Site boundary. A second wash is located on the eastern quarter of the Site and also runs from south to north. The wash located on the eastern portion of the Site contains vegetation on its southern end with vegetation decreasing in density to the north. On the northernmost section of the Site, the eastern wash veers to the west and connects with the western wash in the northwestern corner of the Site.

The Site is bounded on the west by Crest Avenue. Residential homes are located on the west side of Crest Avenue. The Site is bounded on the south and east by residential homes. Undeveloped land leading to the southern embankment of the Santa Ana River bounds the Site on the north.

### 2.2.2 Regional Geology and Hydrogeology

#### *2.2.2.1 Regional Geology*

The Site is relatively flat with an elevation of approximately 740 feet above mean sea level (msl; TOPO, 2002). Regionally, the topography slopes to the north. The Site is situated within the Upper Santa Ana River Drainage Area. The Upper Santa Ana River Drainage Area is composed of the Upper Santa Ana, San Jacinto, and Elsinore Valleys. The northern and eastern boundaries are formed by the San Gabriel, San Bernardino, and San Jacinto Mountains. The Chino Hills and the Santa Ana Mountains make up the western and southern boundaries of the Upper Santa Ana River Drainage Area (California Department of Water Resources [DWR], 1966).

The bordering mountain ranges and basement rocks consist of Mesozoic-age granitic, metamorphosed clastic and volcanic rocks. The bordering Chino Hills consist of Upper Miocene-age marine sedimentary rocks. The Upper Santa Ana River Valley in the Site area consists of Recent-age alluvium, Pleistocene-age non-marine sedimentary rocks, and exposed areas of Mesozoic-age granitic basement rocks (California Division of Mines and Geology [CDMG], 1986).

#### *2.2.2.2 Regional and Site Hydrogeology*

The Santa Ana River, which bounds the Site on the north, is the principal drainage feature in the area. The Santa Ana River originates in the San Bernardino Mountains and flows southwesterly across the Upper Santa Ana River Valley to the Santa Ana Canyon below Prado Dam. Below Prado Dam, the Santa Ana River crosses the coastal plain of Orange County and discharges to the Pacific Ocean between Huntington Beach and Newport Beach (DWR, 1966).

The Site area is located in the Riverside-Arlington Subbasin of the Upper Santa Ana Valley Groundwater Basin (Basin Number 8-2.03), as defined by the California Department of Water Resources (DWR, 2003). The California Regional Water Quality Control Board - Santa Ana Region (RWQCB) places the Site within the boundary area of the Arlington and Chino Hydrologic Subarea of the Middle Santa Ana River Hydrologic Area of the Santa Ana River Hydrologic Unit (Units 801.21 and 801.26). The RWQCB reports that water within Units 801.21 and 801.26 are of beneficial use (RWQCB, 1995). The depth to groundwater beneath the Site has ranged from approximately 10 to 32 feet below grade (fbg) in onsite groundwater monitoring wells (Barto, 1989, and FREY, 2005b). The shallow groundwater is believed to be regional, as opposed to perched, based on information provided by the Western Municipal Water District and the presence of the Santa Ana River, which forms the northern boundary of the Site.

Groundwater in the area is found mainly in alluvial deposits. Quaternary-age alluvial deposits in the subbasin consist of sand, gravel, silt and clay deposited by the Santa Ana River and its tributaries (DWR, 2003).

### 2.2.3 Site Geology

Site geology has been characterized based on previous investigation activities, including the following:

- Soil borings (114) - maximum depth of 10 fbg
- Monitoring wells (9) - maximum depth of 44 fbg
- Test pits (94) - maximum depth of 10 fbg
- Exploratory trenches (14) - maximum depth of 15 fbg

Shallow soil from the surface to 4 fbg generally consists of loose and porous silty sand, clayey sand, and sandy clay. However, with topography changes across the Site, the thickness of these unconsolidated materials varies. Across the Site, the interval from 4 to 7 fbg consists mainly of highly weathered granite, which becomes more competent between the depths of 7 and 10 fbg. Granitic bedrock was encountered as shallow as 2 fbg near the southern Site boundary. Weathered granite was encountered throughout the entire length of two borings drilled for monitoring well installation to a depth of 25 fbg. In one boring drilled by FREY in 2005, silty clay and fine- to medium-grained sand was encountered from ground surface to a depth of approximately 15 fbg. Decomposed granite was encountered below this depth.

## 2.3 PREVIOUS INVESTIGATION AND REMEDIATION ACTIVITIES

### 2.3.1 Barto - May 1989

In May 1989, Barto Groundwater Consultants (Barto), drilled and installed five groundwater monitoring wells (GMW-1 through GMW-5) at the Site. During drilling, groundwater was observed at depths ranging from 13 fbg (Well GMW-1) to 36 fbg (Well GMW-5). Groundwater monitoring wells were completed at depths ranging from 21 fbg (GMW-1) to 42.5 fbg (GMW-5). The wells were sampled in June 1989 and analyzed for chloride, total dissolved solids (TDS), and conductance. Barto concluded that elevated levels of chloride, TDS, and specific conductance were present in the groundwater samples collected from Wells GMW-4 and GMW-5. The measured depth to groundwater in the wells ranged from 14.89 feet below the top of casing in Well GMW-1 to 32.89 feet below the top of casing in Well GMW-5. Groundwater was estimated to flow toward the north/northeast (Barto, 1989).

### 2.3.2 Earthsafe - August 2003

In August 2003, Earthsafe conducted soil and groundwater assessment activities at the Site under contract with the City of Riverside. The soil investigation consisted of drilling and sampling 24 soil borings (B-1 through B-24) to depths of 3 fbg. Borings B-1 through B-4 were drilled adjacent to each of the four aboveground tanks; Borings B-5 through B-12 were drilled at increasing distances away from Borings B-1 and B-4; and Borings B-13 through B-24 were drilled in various areas across the Site.

Soil samples were collected from depths of 0.5 fbg and 3 fbg, and analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), selected metals, organochlorine pesticides and PCBs. Where present, TPH, VOCs, SVOCs and organochlorine pesticides were detected at concentrations below their respective cleanup levels or preliminary remediation goals (PRGs) for residential soils as presented by the United States Environmental Protection Agency (USEPA, 2004).

Selected metals were detected in all of the soil samples collected during the investigation. Metal concentrations were below their respective PRGs for residential soils, with the exception of arsenic. PCBs were detected in nearly all soil samples collected (up to a maximum concentration of 499 mg/kg), and were the highest in soil samples collected near the former aboveground tanks and from the former sludge beds. Aroclor 1248 was the only PCB congener detected (Earthsafe, 2003).

In addition, groundwater samples were collected from onsite Wells GMW-1, GMW-2, GMW-4, and GMW-5; Well GMW-3 could not be located. Groundwater samples were analyzed for TPH, VOCs, SVOCs, metals, organochlorine pesticides, PCBs, and TDS. TPH, VOCs, SVOCs, organochlorine pesticides, and PCBs were not detected. TDS concentrations ranged from 1,030 milligrams per liter (mg/L) to 1,560 mg/L. The average depth to groundwater was measured at approximately 20 fbg (Earthsafe, 2003).

### 2.3.3 FREY Environmental, Inc. (FREY) - December 2003

In December 2003, FRA contracted with FREY to provide environmental consulting services upon notification by the City of Riverside that soils onsite contained PCBs. Investigation activities included concrete sampling, additional soil sampling (90 soil borings), and soil vapor sampling (24 soil vapor probes).

#### *2.3.3.1 Concrete Sampling*

A sampling grid was constructed on 25-foot centers to facilitate the sampling of concrete rubble produced from the demolition of the sewage treatment plant. A total of 27 concrete samples (CS#1 through CS#27) were collected from four rubble piles and from the remnants of one partially demolished digester and analyzed for PCBs. Concrete Sample CS#15, collected from the largest concrete rubble pile, and concrete Samples CS#24 through CS#27, collected from the partially demolished digester, contained PCB concentrations in excess of 50 mg/kg (FREY, 2003).

#### *2.3.3.2 Soil Sampling*

Ninety soil borings were drilled and sampled to depths between 1.5 fbg and 10 fbg on a 70-foot grid pattern in the area of the former aboveground tanks and former sludge beds. Selected borings were also placed around the Site perimeter. Soil samples were collected from depths of 0.75, 1.5, 3, 5, and 10 fbg where possible. Soil samples collected from depths of 0.75, 1.5, and 3 fbg were analyzed for PCBs; soil samples collected at depths of 5 and 10 fbg were analyzed for

PCBs only if the shallower soil samples contained PCBs. Selected soil samples were also analyzed for polynuclear aromatic compounds (PAHs), arsenic, organophosphorous pesticides, and herbicides.

Concentrations of organophosphorous pesticides and herbicides were not detected. PAHs were either not detected or were detected at concentrations below their respective residential PRGs (USEPA, 2004), with the exception of two soil samples that contained concentrations of dibenzo(a,h)anthracene that slightly exceeded the residential PRG.

Arsenic was detected in soil at similar concentrations to those detected during the Earthsafe investigation in August 2003.

PCBs were detected in the majority of the 251 soil samples collected during the investigation (up to a maximum concentration of 9,560 mg/kg). The highest concentrations of PCBs were detected in soil samples collected from 0.75 fbg from the former sludge bed areas. PCBs in excess of 50 mg/kg were not detected in soil samples collected from outside the former sewage plant or sludge bed area, with the exception of two soil samples collected from the western end of the southern brine basin. Aroclor 1248 and Aroclor 1254 were the main congeners detected in the 251 soil samples, and Aroclor 1016 was detected in one soil sample.

Four soil samples with detectable PCB concentrations from the sludge bed areas were collected at approximately 3 fbg, composited into a single sample, and analyzed for dioxins and furans. The composite sample result indicated that 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD; the most toxic dioxin) was not present above the method detection limit of 0.234 picograms per gram (pg/g). A toxic equivalency quotient (TEQ) of 0.385 micrograms per kilogram (µg/kg) was calculated for the composite sample.

#### *2.3.3.3 Soil Vapor Sampling*

Soil vapor sampling was conducted via 24 soil vapor probes installed to depths of approximately 5 fbg to evaluate subsurface conditions across the Site. The vapor probes were located as follows: 11 of the 24 soil vapor probes were advanced and sampled within the area of the former sewage treatment plant and the sludge beds, and the remaining 13 soil vapor probes were advanced in various locations across the Site. Soil vapor samples were collected at each location and analyzed for VOCs. No VOCs were detected above laboratory reporting limits in any of the 24 soil vapor samples.

### 2.3.4 Geomatrix – 2004

#### *2.3.4.1 Concrete Sampling*

In March 2004, Geomatrix collected 77 samples of concrete and rock from eight stockpiles and the remnants of the former digester for PCB analysis. A total of 41 concrete samples were collected from the digester, one sample from each of the four stockpiles sampled by FREY, and 32 samples from the previously un-sampled four concrete stockpiles. The concrete samples did not contain concentrations of PCBs in excess of 50 mg/kg. Concrete samples collected from the lower portion of the digester were limited to Aroclor 1242, while concrete samples collected from the upper portion of the digester were limited to Aroclor 1248 (Geomatrix, 2004).

#### *2.3.4.2 Soil Sampling*

In March and April 2004, Geomatrix collected 71 surficial soil samples (SS1 through SS71) in various locations across the Site to further evaluate the distribution of PCBs in soil. PCBs were detected in 63 of the 71 samples collected at concentrations up to 720 mg/kg. Aroclor 1248 was reported in 61 of the 71 soil samples, while Aroclor 1260 was reported in the remaining soil samples.

In July and October 2004, Geomatrix conducted six phases of additional investigation (excavation test pits). In all, 94 test pits (TP1 through TP60, TP64 through TP81, and TP98 through TP113) were excavated onsite to depths ranging from 0.5 fbg to 10 fbg. The initial 47 test pits were centered around the former treatment plant facilities, drainages, and Site perimeter. Soil samples were generally collected from depths of 0.5, 2.5, 5, 7.5, and 10 fbg. Soil samples collected from 0.5, 2.5, and 5 fbg were analyzed for PCBs; soil samples from greater depths were only analyzed if PCBs were detected in the 5 fbg sample. Thirteen of the initial 47 trenches could not be excavated to the proposed depth of 10 fbg due to the presence of granitic bedrock. The remaining 47 test pits were excavated to depths of 2.5 fbg with soil samples collected from 0.5 and 2.5 fbg. These 47 test pits focused upon the drainages, south and southwestern portions of the Site, the Site perimeter, and the area around the former sewage treatment plant.

A total of 236 soil samples were collected and analyzed for PCBs from the test pits. The highest concentrations of PCBs (maximum 3,100 mg/kg) were detected in surficial soil samples collected from the vicinity of the former sewage treatment plant and sludge beds. PCB concentrations generally decreased with depth, although two soil samples collected from 10 fbg did contain PCBs.

Additional soil sample analyses were conducted as follows: 12 soil samples collected from 0.5 fbg were analyzed for chlorinated and organophosphorous pesticides, herbicides, selected metals, and PAHs; 11 of these 12 soil samples were also analyzed for VOCs; and 10 soil samples were analyzed for perchlorate, nitrosodimethylamine (NDMA), nitroaromatics, and nitramines. Chlorinated pesticides, organophosphorous pesticides, herbicides, metals, PAHs, VOCs, perchlorate, NDMA and nitroaromatics were generally not detected. Where detected, however, soil samples were present at concentrations below their respective residential PRGs.

### 2.3.5 <u>FREY Environmental, Inc. – 2005 through 2006</u>

#### *2.3.5.1 Additional Soil Vapor Survey*

At the request of DTSC, an additional soil gas survey was conducted. The investigation consisted of advancing 15 soil vapor probes (SV1 thru SV15) to depths of 5 fbg, with three of the soil vapor probes (SV7, SV8, and SV9) advanced to final depths of 15, 11, and 10 fbg. Soil vapor samples were collected following DTSC protocol and analyzed in an onsite mobile laboratory for VOCs. VOCs were not detected above laboratory detection limits, with the exception of toluene, which was detected in three vapor samples at concentrations up to 0.38 micrograms per liter (µg/L; FREY, 2005a).

At the termination of vapor sampling activities, soil samples were collected from selected areas to confirm the lack of VOCs in the subsurface soil matrix. Soil samples were collected from the same locations as SV2, SV4, SV6, SV13, SV14, and SV15 at depths of 5 fbg and analyzed for VOCs. VOCs were not detected in the samples collected (FREY, 2005a).

#### *2.3.5.2 Groundwater Monitoring Well Installation*

At the request of DTSC, four groundwater monitoring wells (MW6 thru MW9) were drilled and installed to depths between 20 and 25 fbg. Soil samples collected during well installation were analyzed for TPH-gas, TPH-diesel, PAHs, PCBs, SVOCs, and Title 22 Metals. PCBs were detected in five soil samples collected at concentrations ranging from 0.5 mg/kg to 330 mg/kg, and low concentrations of TPH-diesel were detected in soil samples collected from Well MW7 and MW8 (FREY, 2005b).

#### *2.3.5.3 Groundwater Monitoring Well Sampling*

Groundwater monitoring and sampling of Wells GMW-1, GMW-2, GMW-4, GMW-5, and MW6 through MW9 was conducted on September 17, 2005, November 4, 2005, and January 18, 2006. The depth to groundwater ranged from 10.88 feet below top of casing (Well GMW-1 on September 17, 2005) to 30.22 feet below top of casing (Well GMW-5 on January 18, 2006). Groundwater was calculated to flow toward the north or northwest during the three groundwater sampling events (FREY, 2006a).

Groundwater samples collected from Wells GMW-1, GMW-5, and MW6 through MW9 on September 17, 2005, were analyzed for TPH-gas, TPH-diesel, VOCs, PAHs, perchlorate, dioxins, and furans. Groundwater samples collected on November 4, 2005, were analyzed for the same analytes as on September 17, 2005. However, water samples were additionally analyzed for SVOCs, but not for dioxins or furans. Groundwater samples collected on January 18, 2006, were analyzed only for PCBs, Title 22 metals, and perchlorate (FREY, 2006a). Groundwater samples collected from the wells during the three events did not contain detectable concentrations of VOCs, SVOCs, PAHs, TPH-gas, or TPH-diesel. Low concentrations of PCBs, perchlorate, selected Title 22 metals, dioxins, and furans were detected in groundwater samples collected from Wells MW6 through MW9.

The four wells installed by Frey (MW-6, MW-7, MW-8 and MW-9) and wells GMW-1, GMW-2, GMW-4, and GMW-5 (installed in 1989) were abandoned in accordance with State regulations in June 2006 (Frey, 2006b).

##### *2.3.5.4 Dioxin and Furan Sampling*

In December 2005, 20 soil samples (#1 through #20) were collected at depths of 6 inches below the ground surface from various locations across the Site. Soil Samples #1 through #5 were collected from locations previously assessed to contain greater than 50 mg/kg of PCBs; soil Samples #6 through #10 were collected from locations previously assessed to contain PCBs between 0.22 mg/kg and 50 mg/kg; and soil Samples #11 through #20 were collected from locations previously assessed to contain less than 0.22 mg/kg of PCBs. The soil samples were analyzed for PCBs and the PCB congeners were speciated using the DiCaprio Method, and the samples were further analyzed for dioxins/furans.

Soil Sample #1 contained the greatest concentrations of PCBs (1,800 mg/kg) and dioxin and furan TEQ (5,270 parts per trillion [ppt]). Neptune and Company, Inc. (Neptune) conducted a statistical analysis of the analytical data and concluded that a very strong correlation existed between the presence of PCBs and dioxins and furans in the PCB-impacted areas scheduled for excavation (Neptune, 2006).

##### *2.3.5.5 Additional Dioxin, Furan and PCB Sample Analysis*

The DTSC subsequently requested that an additional five soil samples be collected to further assess the extent of dioxins and furans in the vicinity of Sample #20. As a result, soil Samples #21 through #25 were collected 20 feet to the north, east, south, west, and 2 feet beneath Sample #20, respectively, and the samples were analyzed for PCBs and dioxins/furans. PCBs were not detected in Samples #21 through #25. Dioxin and furan TEQ ranged from 1.1 ppt (Sample #24) to 42.4 ppt (Sample #22).

##### *2.3.5.6 Response Plan*

In July 2006, a *Revised Response Plan, Excavation of Soils Containing PCBs* (FREY, 2006a) was prepared to address remediation of impacted soil beneath the Site to prepare for future single-family residential development. The remediation approach selected was to excavate, remove, and properly dispose of soil containing PCB concentrations in excess of the USEPA residential regional screening level (RSL) of 0.22 mg/kg. In addition, additional soil samples were to be collected from select locations and analyzed for dioxins, furans, and metals.

#### 2.3.6 <u>TRC - 2009</u>

In 2009, TRC conducted Phase 1 remediation activities consisting of the excavation, removal, and disposal of soil containing PCB concentrations in excess of 50 mg/kg (target removal level) from locations determined by previous Site investigation efforts. Soil removal activities were conducted between April and July 2009. Excavation areas were concluded only after confirmation samples from the excavation sidewalls and bottoms returned laboratory data results that verified the remaining soil was less than 50 mg/kg for PCBs. Excavated soil with PCB concentrations at or above 50 mg/kg was transported offsite to the Waste Management, Incorporated (WMI) Kettleman Hills facility in Kettleman City, California. A total of approximately 8,666 tons of soil were removed during Phase 1 activities. Additional items removed from the Site included vegetation (green waste), PCB contaminated concrete, sewer pipe, and utility poles (TRC, 2010).

A total of 31 soil samples were analyzed for dioxin/furan congeners. Of the samples analyzed, 13 contained 2,3,7,8-TCDD Equivalent (Eq.) concentrations in excess of the health-based screening level for residential land-use (i.e., 4.5 pg/g or 4.5E-6 mg/kg). This health-based screening level represents the USEPA residential RSL (USEPA, 2013). The samples that contained the highest concentrations of 2,3,7,8-TCDD Eq. were TP-30E (4,817.7), TP-30S (8,372.8), and TP-30W (300.7). These three samples were co-located with PCB-impacted soil and six additional samples exceeded the health-based screening level (B-67, TP-29, S-22+20E, TP-30N, TP-30B, and TP-103). These nine samples were co-located with PCB-impacted areas and were planned for removal during Phase 2 mass grading activities.

## 3.0 REMEDIAL EXCAVATION OBJECTIVES

### 3.1 REMEDIAL EXCAVATION SCOPE

The purpose of the remedial excavation activities summarized herein was to prepare the Site for single-family residential development by excavating, removing, and properly disposing of soils containing PCB concentrations in excess of the USEPA residential RSL of 0.22 mg/kg from locations identified during previous Site investigation efforts. In addition, soil samples were collected from select locations and analyzed for dioxins, furans, and metals. This work was performed in accordance with Section 7.10 (Excavation of Soil Containing Less Than 50 mg/kg of PCBs) of the *Revised Response Plan, Excavation of Soils Containing PCBs* (FREY, 2006a).

### 3.2 REMEDIAL EXCAVATION GOALS

The RSL combines current human health toxicity values with standard exposure factors to estimate contaminant concentrations in soil, air and water that are considered by the EPA to be protective of human health over a lifetime (USEPA, 2013). The use of the RSL as a cleanup goal for PCBs (0.22 mg/kg) is conservative given the realities of demographic residential patterns. To ensure that the goal is acceptable, a post-remediation human health risk assessment (HHRA) using the confirmation sampling results obtained during Phase 2 of the project was developed. A summary of this HHRA is presented in Section 7.0.

Based on sample results for metals from the Phase 1 work activities, confirmation soil samples will be collected from the B-1 area and analyzed for hexavalent chromium.

Soil containing dioxins and furans will be removed from the Site until the TCDD Eq. is below the health-based screening level for residential use (i.e., 4.5 pg/g or 4.5E-6 mg/kg).

## 4.0 REMEDIAL EXCAVATION ACTIVITIES

### 4.1 SUMMARY OF REMEDIAL EXCAVATION

The remediation approach selected for the Site includes the excavation, removal, and proper disposal of soil containing PCB concentrations in excess of the USEPA residential RSL of 0.22 mg/kg. In addition, soil samples were collected at select locations and analyzed for dioxins, furans, and metals.

Between July 11, 2013, and January 30, 2014, TRC was onsite to observe FRA's removal of impacted soil containing PCB concentrations above 0.22 mg/kg from multiple locations onsite. Remedial excavation and confirmation soil sampling activities were completed in January 2014. During excavation, if initial confirmation soil sample results indicated that PCB levels were above 0.22 mg/kg, the excavation was extended laterally or deepened in the direction of the exceeding sample location. Excavation areas were concluded only after verifying that PCB concentrations in the final confirmation soil samples were less than the RSL of 0.22 mg/kg. Details of remedial excavation and confirmation soil sampling activities are presented below.

The vertical and lateral limits of the remedial excavations at the Site, along with the accompanying soil sample locations, are shown on Figures 3 through 6. Photographs documenting various Site activities are presented in Appendix A, and a description of general field procedures used during excavation soil sampling activities is presented in Appendix B.

### 4.2 SEQUENCE OF WORK

Construction activities for excavating and handling the PCB-impacted soil corresponded to the following general sequence:

- Established traffic control, Site security, and Site access.
- Established a decontamination pad for cleaning vehicles prior to exiting the Site.
- Established erosion, sediment and dust control measures as necessary (sand bags, wind screen, water trucks, etc.).
- Contracted a licensed surveyor to survey areas to be excavated and confirmation soil sample locations.
- Mobilization of excavators, loaders, dozer, water trucks, haul trucks, and concrete crusher.
- Set up and maintained air monitoring and weather monitoring equipment daily.
- Conducted excavation, stockpiling, and confirmation sampling of dioxin/furan and metals-impacted locations.
- Conducted excavation, stockpiling, loading and hauling of soil exceeding 0.22 mg/kg PCBs.

- Conducted confirmation soil sampling to evaluate removal of impacted soil.
- Conducted additional soil removal activities, as appropriate, in areas of remaining soil exceeding 0.22 mg/kg PCBs.
- Conducted final confirmation soil sampling to verify removal of PCB-impacted soil.

## 4.3 GREEN WASTE MANAGEMENT

Vegetation (green waste) on areas of the Site to be excavated was cleared and stockpiled prior to excavation activities. The green waste was transported offsite to the Haven Diversion Construction and Demolition facility in Ontario, California, for disposal. A total of 422.26 tons of green waste was transported offsite for disposal.

## 4.4 CONCRETE

Concrete debris remaining from the demolition of the sewage treatment plant was addressed during Phase 2 activities. This material had been previously tested for PCBs and was stockpiled in the northern brine basin. A portion of the material was crushed onsite and will be used for fill. The remaining portion was transported offsite to the WMI Azusa Land Reclamation facility in Azusa, California, for disposal. A total of 4,481.37 tons of concrete was transported offsite for disposal. Copies of the waste manifests and weight tickets related to concrete disposal are included on a USB flash drive in Appendix C.

## 4.5 REMOVAL AND DISPOSAL OF ASBESTOS-CEMENT PIPE

A 12-inch diameter asbestos-cement pipe measuring approximately 1,260 linear feet was removed during excavation activities. The approximate location of this pipe is shown on Figure 5. The pipe was removed according to a South Coast Air Quality Management District Procedure 5 Plan submitted by TRC on August 6, 2013. The pipe (50.82 tons) was transported to the WMI Azusa Land Reclamation facility in Azusa, California, for disposal. Copies of the waste manifests and weight tickets related to the piping disposal are included on a USB flash drive in Appendix C.

## 4.6 SOIL EXCAVATION AND CONFIRMATION SOIL SAMPLING

### 4.6.1 <u>Metals</u>

At the location designated B-1, additional soil removal was conducted from the north and west sidewalls and the excavation floor based on results of previous Phase 1 sampling activities. The final excavation depth was 5 fbg. Upon completion, confirmation samples were collected from the four sidewalls and floor and analyzed for total metals including chromium VI. The sample locations are shown on Figure 3.

### 4.6.2 Dioxins/Furans

Additional excavation and confirmation sampling for dioxins/furans was performed at the 13 locations identified in the *Phase 1 Response Plan Implementation Report* (TRC, 2010). Soil at these 13 locations exceeded the 2,3,7,8-TCDD equivalent health-based screening level for residential land use (i.e., 4.5 pg/g or 4.5E-6 mg/kg). This screening level represents the USEPA residential RSL (USEPA, 2013). The dioxin/furan sampling locations are shown on Figures 3 through 6. A total of 50 soil samples were collected and analyzed for dioxins and furans. If a confirmation sampled exceeded the screening level, additional soil was removed vertically/laterally and additional samples were collected. This procedure was repeated until final confirmation sample results were below the TCDD Eq. screening level. A confirmation sample could not be collected from the east sidewall of the TP-30 location (TP-30E) as the excavation extended into the adjacent excavation for location B-1. There was no sidewall material remaining to collect a sample from.

### 4.6.3 PCBs

Soil containing PCBs at or above 0.22 mg/kg was removed from five areas of the Site as determined from previous site characterization efforts. These areas were identified in the FREY *Revised Response Plan* (FREY, 2006a) as follows:

1) Isolated areas (includes approximately 21 locations throughout the Site);
2) Previously excavated area (located in the north-central portion of the Site and includes the plateau);
3) The eastern gully;
4) The western gully; and
5) The remaining area (between 25 and 30 acres of the Site including the northern and southern brine basins).

Each of these areas was excavated to a predetermined depth and confirmation samples were collected. Additional soil removal and sampling was continued until final confirmation sample results were below 0.22 mg/kg. The location and elevation of each soil sample was surveyed by a State of California Registered Land Surveyor. Approximately 995 soil samples were collected and analyzed for PCBs during Phase 2 activities (see Table 1). Additional details regarding each area are provided in the following sections.

#### *4.6.3.1 Isolated Areas*

At isolated areas of the Site, an approximate 10-foot by 10-foot area was excavated to a predetermined depth ranging from 2 to 10 fbg. Confirmation soil samples were collected from the bottom and four sidewalls of each excavation. The sidewall samples were collected from the approximate midpoint of the sidewall relative to the excavation depth. If sample results indicated that PCB levels were still above 0.22 mg/kg, the excavation was extended or deepened in the direction of the exceeding sample location. This process was repeated until confirmation sample results were below 0.22 mg/kg. Approximately 21 such areas were excavated during Phase 2.

At the locations identified as MW-7 and MW-8, a 10-foot by 10-foot excavation was conducted to a depth of 17 fbg. Previous soil samples collected at these locations exceeded 0.22 mg/kg for PCBs at a depth of 15 fbg. Monitoring Wells MW-7 and MW-8 were previously abandoned in June 2006 (FREY, 2006b). Confirmation soil samples were collected from the bottom of the excavation at 17 fbg and from the four sidewalls at a depth of 8 fbg. PCBs were not detected above laboratory reporting limits in these final confirmation soil samples.

##### *4.6.3.2 Previously Excavated Area*

PCB-impacted soil was removed from the entire area encompassing the previously excavated area to depths ranging from 2.5 to 7 fbg. This area was roughly 20 acres in size. During initial confirmation sampling, a large number of the samples in the plateau area were above 0.22 mg/kg. Additional soil samples not specified in the FREY *Revised Response Plan* were collected in an effort to further delineate the plateau area where sample results were repeatedly above 0.22 mg/kg. Based on this effort, an additional 1 foot of soil was removed to a final excavation depth of 3.5 fbg. Additional confirmation samples were then collected until sample results were below 0.22 mg/kg. The additional samples from the area are identified in Table 1 as PLPER (plateau perimeter) E1, E2, E3, etc.

##### *4.6.3.3 The Eastern Gully*

Soil was removed from the eastern gully to a planned depth of 1.5 fbg and confirmation samples were collected from locations specified by FREY. PCBs were detected in some samples below 1.5 fbg, so additional soil was removed from four select areas to a maximum depth of 3.5 fbg (see Figures 3 and 4).

##### *4.6.3.4 The Western Gully*

Soil was removed from the western gully to a planned depth of 2.5 fbg and confirmation samples were collected from locations specified by FREY. PCBs were detected in some samples below 2.5 fbg, so additional soil was removed from two select areas to a maximum depth of 5 fbg (see Figures 3 and 5).

##### *4.6.3.5 The Remaining Area*

The remaining area was between 25 and 30 acres and included the southern brine basin. Additional soil samples not specified in the FREY *Revised Response Plan* were collected in an effort to further delineate the southern brine basin where sample results were repeatedly above 0.22 mg/kg. Based on this effort, soil was removed from the entire southern brine basin area to a depth of 5 fbg. Additional confirmation samples were then collected until sample results were below 0.22 mg/kg. The additional samples from the area are identified in Table 1 as BB-PER (brine basin perimeter) 1 through 27.

As a follow-up to Phase 1 activities, additional soil was removed from the former sewer line location and confirmation samples were collected. These samples are identified as P6 through P9. Refer to Figure 5 for the location of these samples.

In Table 1, a list of each PCB confirmation sample and subsequent step-out samples (if necessary) is provided. In some instances, step-outs from smaller excavations merged into other excavations so that there was no sidewall material remaining to sample. An explanation of these occurrences is listed below:

- CS19Sa - Sample exceeded 0.22 mg/kg. The step-out of this sidewall merged with the brine basin area excavation; no sidewall material remaining to sample.
- CS310Nc – The north sidewall at this location was stepped out into the adjacent excavation for CS431; no sidewall material remaining to sample.
- CS422Ea – The east sidewall at this location was stepped out into the adjacent excavation for CS398B; no sidewall material remaining to sample.

## 4.7 SOIL LOADING, TRANSPORTATION, AND DISPOSAL

Soil exceeding the remediation cleanup goals was excavated and transported offsite to the WMI Azusa Land Reclamation facility in Azusa, California, for disposal. This facility is permitted to accept low-level PCB-impacted soil. Excavated soil received by this facility was sampled and characterized prior to acceptance.

Each truckload of impacted soil was transported under a non-hazardous waste manifest. Copies of the manifests are presented on a USB flash drive included in Appendix C. Each truckload was also weighed as it entered the facility. Based on these weights, the total tonnage of PCB- and/or dioxin/furan-impacted soil removed during the remedial excavation from the Site and disposed by FRA was 165,226.64 tons. Summary tables of weights per truckload are also provided in Appendix C.

In addition to PCB-impacted soil, some clean soil was removed from within the excavation area during Phase 2. A total of 30,782 tons of clean soil was removed and hauled offsite for disposal. This soil was transported to Puente Hills Landfill in the City of Industry, California (14,436 tons), and WMI Nu-Way Land Reclamation in Irwindale, California (16,346 tons). Including the removal of clean soil from the Site, a total of 196,008.64 tons of soil were removed during Phase 2 activities. Imported soil was not brought onsite to backfill any of the excavation areas.

## 4.8 AIR MONITORING AND DUST CONTROL

Air monitoring onsite was performed according to the Work Plan for Air Monitoring from Appendix E of the *Revised Response Plan* (FREY, 2006a). Air monitoring equipment and dust control measures were used to monitor and reduce the amount of airborne particulate matter (fugitive dust) resulting from earth-moving activities onsite. Fugitive dust emissions are regulated by the South Coast Air Quality Control District (SCAQMD) under Rule 403 - Fugitive Dust.

### 4.8.1 Air Monitoring

The Work Plan for Air Monitoring was implemented to monitor the concentration of airborne particulate matter with an aggregate particle diameter of 10 microns or less ($PM_{10}$), and also to measure the concentration of PCBs in air during earth-moving activities.

#### *4.8.1.1 Particulate Monitoring*

Monitoring for concentrations of $PM_{10}$ at the Site was accomplished using Thermo-Electron DataRAM 4000 particulate monitors. Monitors were placed at locations upwind and downwind of site activities (see Figure 2), and operated simultaneously. The monitors provided real-time concentration and median particle size information, and logged the data for the duration of the monitoring activities. The instruments were calibrated (zeroed) before each monitoring event, and flow rates were checked on each meter to ensure they were operating at a calibrated rate of 1.7 to 2.3 liters per minute. An action level of 7 micrograms per cubic meter (µg/m3) $PM_{10}$ was established, measured as the difference between upwind and downwind monitors over a 1-hour period. Exceedances of this level indicated potentially elevated levels of PCBs, and additional watering or other control measures were implemented to reduce concentrations. The monitors were also manually checked on an hourly basis and the readings were recorded on field data sheets. A copy of these data sheets is included in Appendix D on a USB flash drive.

Wind speed and direction data were collected using a Davis Vantage Pro 2 Weather Station and a Kestrel 3000 pocket wind meter. Prevailing wind at the Site was generally from the north-northwest, with still mornings and gusts in the afternoon. A hand-held wind speed meter was used to gauge wind speed during gusty conditions.

#### *4.8.1.2 PCB Concentrations in Air*

Monitoring for PCB concentrations in air was conducted using a Buck Libra constant flow air sampling pump fitted with a sample cassette developed with a combination of glass fiber filter and solid sorbent (Florisil tube), placed at the downwind monitoring location. The sample was collected over the duration of the day's activities. The volume of air sampled through the pump was calculated using the average flow rate ($m^3$/minute) and duration of sampling (minutes). The flow rate of the pump was measured before each sampling event using a Dwyer Industries flow meter. During the first 2 weeks of excavation, samples were collected each day. Following this period, two samples were collected each week during the duration of Phase 2 excavation activities. Samples were analyzed by EMSL Analytical, Inc. for PCBs using National Institute for Occupational Safety and Health (NIOSH) Method 5503. The action level established for this project was 0.00007 mg PCB/$m^3$. Laboratory data for analysis of the PCB collection media is provided in Appendix D on a USB flash drive. Laboratory analysis of the air sample collection media from the downwind air monitoring station did not indicate any PCB concentrations above laboratory reporting limits.

#### 4.8.2 Dust Control

Under the provisions of SCAQMD Rule 403 - Fugitive Dust, owners/operators of facilities or projects are required to limit emissions of fugitive dust generated by their activities. Specifically, the contractor is responsible for meeting requirements specified in Rule 403 and implementing reasonable Best Available Control Measures (BACM) in accordance with Rule 403 to minimize dust emissions. The SCAQMD has a threshold of 150 pounds per day of $PM_{10}$. Dust control measures were specified based on the results of dust monitoring, onsite activities, type and location of operations, and the prevailing wind direction. The following dust control measures were implemented to stabilize exposed surfaces and minimize suspended or tracked dust particles:

- Water was applied to unpaved roads to minimize dust generated by vehicles, trucks and heavy equipment.
- A speed limit of 10 miles per hour (mph) was imposed for vehicles, trucks and equipment on unpaved areas onsite.
- Water was applied to soil stockpiles before loading trucks and after loading was completed for the day. Water was also applied during soil stockpiling activities and at the end of each day.
- Truck trailers were adequately tarped and truck tires were cleaned with a pressure washer prior to leaving the site. Dust emission was further suppressed by placing crushed rock on the ingress and egress routes to the Site.

## 5.0 SAMPLING AND ANALYSIS

Confirmation soil samples collected during Phase 2 soil removal activities were submitted to Associated Laboratories of Orange, California, for the following analyses:

- PCBs using EPA Method 8082 (995 samples);
- Metals using EPA Method 6010B/7471A (5 samples);
- Hexavalent chromium using EPA Method 7199 (5 samples); and
- Dioxins/furans using EPA Method 1613B (50 samples).

Results of laboratory analysis of soil samples are presented in Tables 1 through 3, and copies of the official laboratory reports are included in Appendix E on a USB flash drive.

Air sample collection media from the downwind monitoring station was analyzed by EMSL Analytical, Inc. for PCBs using NIOSH Method 5503. Copies of the official laboratory reports are included in Appendix D on a USB flash drive.

## 6.0 FINDINGS

### 6.1 GENERAL

The findings of the Phase 2 remedial excavation activities are presented below.

- Five areas of the Site (as described in the FREY *Revised Response Plan*) were excavated to remove PCB-impacted soil at or above the RSL of 0.22 mg/kg. A total of ~995 confirmation soil samples were collected for PCB analysis throughout the period of soil removal activities (includes ~384 initial samples that exceeded the RSL). If results of initial sampling identified PCBs above the RSL, additional soil removal and sampling was conducted. At the conclusion of excavation activities, final confirmation samples were below 0.22 mg/kg for PCBs.
- During the 2009 Phase 1 removal action, soil samples collected from the sample location identified as B-1 were determined to have metals concentrations above background levels, including elevated levels of total chromium. FRA agreed to re-test the B-1 area for hexavalent chromium and total metals during Phase 2. Additional soil was removed from the B-1 location and was re-tested for hexavalent chromium and total metals. Although some metals were found to exceed background concentrations in the five samples collected, the levels were significantly below USEPA residential RSLs, with the exception of arsenic. However, arsenic was only detected in one sample at a concentration below the established background level (5.6 mg/kg). With respect to hexavalent chromium, a background concentration had not been established during previous Site investigations. Hexavalent chromium was detected in all five samples at a maximum of 0.288 mg/kg, which is below the residential RSL. The B-1 area was co-located with a larger, planned PCB excavation (CS382; see Figure 3). Following the collection of samples from the B-1 area, the larger area encompassing B-1 was excavated to 7 fbg. The soil represented by the five samples from the B-1 area was subsequently removed.
- Thirteen dioxin/furan-impacted locations identified during Phase 1 activities were addressed by conducting additional excavation and confirmation sampling. Of the 50 confirmation samples collected, 17 were above the health-based screening level (4.5 pg/g). Consequently, additional soil was removed from these locations and more confirmation samples were collected. This procedure was repeated until all final confirmation sample results were below 4.5 pg/g. A confirmation sample could not be collected from the east sidewall of the TP-30 location (TP-30E) as the excavation extended into the adjacent excavation for location B-1. There was no sidewall material remaining to collect a sample from. Results from these samples are discussed further in Section 6.2.

- PCB-impacted soil (165,226.64 tons) generated during excavation activities was characterized as a non-hazardous waste and transported to the WMI Azusa Land Reclamation facility in Azusa, California, for recycling. Additional materials that were removed from the Site included clean soil (30,782 tons), concrete (4,481.37 tons), green waste (422.26 tons), and asbestos-cement pipe (50.82 tons). These disposal totals are also summarized in Table 4.
- Laboratory analysis of the air sample collection media from the downwind air monitoring station did not indicate any PCB concentrations above laboratory reporting limits.

## 6.2 DIOXINS/FURANS AND TOXICITY EQUIVALENCE FACTORS

It has been recognized for many years that TCDD and a group of related chlorinated compounds (often collectively referred to as "dioxins") are ubiquitous environmental contaminants. These compounds occur in the environment as complex mixtures of a large number of different congeners with varying degrees and positions of chlorine substitution. The presence of these compounds in the environment is primarily associated with combustion sources. In general, these compounds are extremely toxic and exhibit a wide range of effects at low doses including carcinogenicity, immunotoxicity, reproductive and developmental toxicity. These observations were described in a report to the Scientific Review Panel (SRP) for Toxic Air Contaminants (TACs; CDHS, 1986). While these congeners are believed to have different carcinogenic potencies, suitable data for potency calculations have been developed for only a small number of the congeners.

In order to calculate the potency of these complex mixtures, the Toxicity Equivalence Factor (TEF) approach has been widely used to express estimates of the carcinogenic potency of various dioxin and dibenzofuran congeners relative to that of TCDD (van den Berg et al., 2000). The TEF represents an order of magnitude estimate of the toxicity of the compound relative to TCDD. Since its initial development in 1983, the TEF methodology has continued to evolve based on the most recent findings of toxicology studies. Several regulatory authorities, including the World Health Organization (WHO) and USEPA, have developed TEF values based on the evaluation of available scientific data. In 2005, WHO reevaluated the TEFs and published updated values ($TEF_{WHO\text{-}05}$; van den Berg et al., 2006). The California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA), has used the TEF methodology and references this approach in its Technical Support Document for Cancer Potency Factors (OEHHA, 2011). The $TEF_{WHO\text{-}05}$ values replace the $TEF_{WHO\text{-}97}$ and California TEF values that were previously referenced in the Technical Support Document.

A tabular summary of the $TEF_{WHO-05}$ values is provided in the following table:

| Congener | Toxicity Equivalence Factor ($TEF_{WHO-05}$) |
|---|---|
| **Polychlorinated Dibenzo Dioxins (PCDDs)** | |
| 2,3,7,8-TCDD | 1 |
| 1,2,3,7,8-PeCDD | 1 |
| 1,2,3,4,7,8-HxCDD | 0.1 |
| 1,2,3,6,7,8-HxCDD | 0.1 |
| 1,2,3,7,8,9-HxCDD | 0.1 |
| 1,2,3,4,6,7,8-HpCDD | 0.01 |
| 1,2,3,4,6,7,8,9-OCDD | 0.0003 |
| **Polychlorinated Dibenzofurans (PCDFs)** | |
| 2,3,7,8-TCDF | 0.1 |
| 1,2,3,7,8-PeCDF | 0.03 |
| 2,3,4,7,8-PeCDF | 0.3 |
| 1,2,3,4,7,8-HxCDF | 0.1 |
| 1,2,3,6,7,8-HxCDF | 0.1 |
| 1,2,3,7,8,9-HxCDF | 0.1 |
| 2,3,4,6,7,8-HxCDF | 0.1 |
| 1,2,3,4,6,7,8-HpCDF | 0.01 |
| 1,2,3,4,7,8,9-HpCDF | 0.01 |
| 1,2,3,4,6,7,8,9-OCDF | 0.0003 |

### 6.2.1 Calculation of Total Toxicity Equivalence

For the wide-range of dioxin and furan compounds, a simplified expression of the 2,3,7,8-TCDD Eq. concentration can be established by multiplying the TEF for each congener by the concentration of each congener present in a given sample. For an individual sample, the sum of the 2,3,7,8-TCDD Eq. concentrations yields an expression of concentration that can be used in health risk assessment to establish dose and risk or compared to established health-based criteria to determine whether additional investigation, analysis or refined evaluation of health risks is warranted.

With regard to the data set for the Site, the concentration of each dioxin/furan congener was based on the results of laboratory analysis of samples collected between July 11 and September 15, 2013. For congeners that were not detected above a specified laboratory detection limit, a "surrogate" congener concentration was assumed to be one-half the laboratory detection limit.

The detected and "adjusted" congener concentrations were multiplied by their respective TEF values to yield a concentration expressed in terms of 2,3,7,8-TCDD Eqs. A summary of the concentration of 2,3,7,8-TCDD Eqs. for each of the samples analyzed is presented in Table 3b.

### 6.2.2 Comparison to 2,3,7,8-TCDD Health-Based Screening Level

A total of 50 soil samples were analyzed for dioxin/furan congeners. Of the samples analyzed, 17 contained 2,3,7,8-TCDD Eq. concentrations in excess of the health-based screening level for residential land use (i.e., 4.5 pg/g or 4.5E-6 mg/kg). This health-based screening level represents the USEPA residential RSL (USEPA, 2013). The samples that contained the highest concentrations of 2,3,7,8-TCDD Eq. are TP-30Sa (465.2), TP-30Na (257.9), and TP-30B (120.5). Fourteen additional samples exceeded the health-based screening level. Additional soil was excavated from these locations and confirmation samples were collected. The TCDD Eq. determined in the final confirmation samples was found to be below the health-based screening level (see Table 3b).

## 7.0 POST-REMEDIATION HUMAN HEALTH RISK ASSESSMENT

This post-remediation human health risk assessment (HHRA) has been prepared by TRC on behalf of FRA for the Site and presented in Appendix F on a USB flash drive. The HHRA provides a quantitative assessment of the potential for adverse human health effects that may result from exposure to post-remediation concentrations of chemicals of potential concern (COPCs) in soil and/or soil vapor. The HHRA was performed in accordance with Appendix J of the *Revised Response Plan, Excavation of Soils Containing PCBs* (FREY, 2006a), the Post-Remediation Health Risk Assessment Work Plan, and in accordance with California Environmental Protection Agency (CalEPA) and USEPA guidance.

### 7.1 DATA EVALUATION

Current and historical soil and historical soil vapor quality data were collected, evaluated, and analyzed to identify COPCs to be included for quantitative evaluation as a component of the HHRA. Although groundwater samples were historically collected from the Site from eight onsite groundwater monitoring wells, the wells were abandoned in 2006, and after redevelopment, the site will be using municipal water supply provided by the City of Riverside. Also, no chemicals that have the potential for volatilization were detected in groundwater at the Site.

The soil data considered for evaluation in the HHRA includes soil samples that were collected at maximum depths of approximately 28 fbg during sampling and remedial action events conducted between 2003 and 2014. Although the soil samples collected greater than 10 fbg are not typically quantitatively evaluated in a HHRA, future site grading activities could alter the depths at which residual contamination is encountered. Consequently, the HHRA assumes that potential future residential exposures could occur to all soil, regardless of depth. All COPCs that were detected in soil and not removed as a component of the remedial excavation activities were retained as COPCs for quantitative analysis. It should be noted that this approach retains naturally-occurring elements in the quantitative analysis. In order to differentiate between the contributions of site-related and naturally-occurring COPCs, exposures and risks were also calculated for the naturally-occurring COPCs at background concentrations. The COPCs in soil that were evaluated in the HHRA include (see Appendix F):

- Metals: arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, silver, vanadium, and zinc;
- Dioxins/furans (TCDD Eq.);
- PCBs: total PCBs;
- TPH-diesel; and
- VOCs: acetone and p-isopropyltoluene.

The soil vapor data used in this HHRA include soil vapor samples that were collected at a maximum depth of approximately 15 feet bgs in August 2005. All VOCs detected in soil vapor were considered COPCs for the purpose of this HHRA (see Appendix F).

## 7.2 EXPOSURE ASSESSMENT

The exposure assessment is conducted to estimate the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways by which humans may potentially be exposed. In a typical exposure assessment, reasonable maximum estimates of exposure (RME) are developed for the current baseline land-use assumptions (USEPA, 1989). Similarly, RME may also be developed to reflect future land-use assumptions, particularly if the land use changes significantly from the baseline condition or if the conditions of exposure are expected to change as a result of future site development.

The HHRA quantitatively evaluated non-cancer health effects and theoretical cancer risks using the RME scenario for the following pathways and receptors:

| Exposure Pathway | Residential Receptor | Occupational Worker | Construction Worker |
|---|---|---|---|
| Incidental Ingestion of Soil | √ | √ | √ |
| Dermal Contact with Soil | √ | √ | √ |
| Inhalation of Fugitive Dust | √ | √ | √ |
| Inhalation of Ambient Air | √ | √ | √ |
| Inhalation of Indoor Air | √ | X | |

Complete pathway indicated by check mark. Complete but insignificant pathway, not quantitatively evaluated indicated by “X”.

The concentrations of COPCs at specific exposure points will vary over space and time. However, a single estimate of an exposure point concentration (EPC) is required for risk assessment calculations (USEPA, 1989). This single value must be representative of the average concentration to which a person would be exposed over the duration of the exposure. EPCs generally are estimated using either measured concentrations in environmental media or developed using fate and transport models.

The EPCs in soil were based on the 95 percent upper confidence limit (95% UCL) or the maximum concentration for the COPCs where there was insufficient data to calculate a meaningful UCL. To evaluate background hazards and risks, the background concentrations presented in Appendix F, Table F-1, were used. Metals that were detected at concentrations below representative background levels include arsenic, beryllium, nickel, and vanadium.

Chemical concentrations in soil vapor were used to estimate concentrations of COPCs in indoor and ambient air. To conservatively include potential risks related to inhalation of indoor air in the HHRA, the maximum detected soil vapor concentration was used to predict the EPCs in indoor and ambient air. Indoor air EPCs were calculated by multiplying soil vapor results by a site-specific attenuation factor, and ambient air EPCs were calculated by estimating vapor flux to ambient air from soil vapor and applying the X/Q dispersion model to estimate ambient air concentrations from subsurface vapor flux.

## 7.3 TOXICITY ASSESSMENT

The purpose of the toxicity assessment is accomplished in two steps (USEPA, 1989):

1. Hazard Identification; and
2. Dose-Response Assessment.

Hazard identification entails determining if a chemical can cause an increase in a particular adverse effect (e.g., cancer) and the likelihood that the adverse effect will occur in humans. The result of hazard identification is a profile of the available toxicological information and its relevance to human exposure under conditions present in the environment. This process has been completed by either the USEPA or CalEPA, Office of Environmental Health Hazard Assessment (OEHHA) for all of the COPCs at the Site.

Dose-response assessment entails quantifying the relationship between the dose of a chemical and the incidence of adverse effects in the exposed population. The result of the dose-response assessment is toxicity criteria that are used in the risk characterization to estimate the likelihood of adverse effects occurring in humans at different exposure levels. The toxicity criteria used to evaluate non-carcinogenic health risks are commonly referred to as reference doses (RfDs) for oral and dermal exposures and reference concentrations (RfCs) for inhalation exposures. For carcinogenic health risks, the toxicity criteria used to estimate risk are slope factors (SFs) for oral and dermal exposures and unit risk factors (URFs) for inhalation exposures. The basis for these criteria is described in Appendix F.

Toxicological values and information regarding the potential for carcinogens and non-carcinogens to cause adverse health effects in humans were obtained from a hierarchy of California and USEPA sources.

## 7.4 RISK CHARACTERIZATION

The toxicity and exposure assessments were integrated into quantitative expressions of non-carcinogenic hazards and carcinogenic risks. As was previously discussed, the exposure and risk assessment methodology utilized in this analysis accounts for potential exposure to all COPCs, including those that may be present in soil at concentrations at or below background levels. The reader is encouraged to consider the relative difference between absolute and background risks before determining the significance of the cumulative risks.

The cumulative exposures and risks presented in the following sections include the risk contributions from naturally-occurring metals, dioxins and furans, PCBs, TPH as diesel, and VOCs. The following paragraphs also provide a discussion of the potential exposures and risks associated with exposure to naturally-occurring metals based on the background concentrations of these constituents.

### 7.4.1 Non-Carcinogenic Health Effects

Potential non-carcinogenic effects are typically evaluated by comparing either concentration or dose received by a receptor of the defined period of exposure to the reference dose or reference concentration for a similar exposure period. This ratio of exposure to toxicity is referred to as a hazard quotient (HQ). In cases where individual COPCs potentially act on the same organs or result in the same health endpoint (e.g., respiratory irritants), potential additive effects may be addressed by calculating a hazard index (HI). A HI or HQ (for effects that are not additive) of less than or equal to 1 (referred to herein as the significance threshold) indicates acceptable levels of exposure for COPCs having an additive effect. For the purpose of this HHRA, a HI was calculated by summing the HQs for all COPCs, regardless of toxic endpoint, as recommended by agency guidance (USEPA, 1989). This approach is generally believed to overestimate the potential for non-carcinogenic health effects due to simultaneous exposure to multiple chemicals because it does not account for different toxic endpoints (USEPA, 1989). It should be noted that HQs or HIs greater than 1 do not necessarily mean that adverse health effects will be observed.

#### *7.4.1.1 Residential Receptor*

The non-cancer HQs and HIs associated with potential exposure by the onsite residential receptors are presented in Appendix F, Table F-20. The non-cancer HI for residential receptors exposed to all of the COPCs in soil and soil vapor at the Site is 8. Individual COPCs resulting in HI estimates greater than or equal to 0.1 include arsenic (6), cadmium (0.1), cobalt (0.7), and vanadium (0.1). Incidental ingestion of soil represents the primary exposure pathway and accounts for approximately 91% of the cumulative HI. Cumulative HI estimates for dermal contact, inhalation of fugitive dust, and inhalation of vapors in indoor and ambient air range from 0.6 (dermal contact) to 0.003 (inhalation of vapors in ambient air).

Approximately 94% of the cumulative HI estimate is related to metals (e.g., arsenic) that occur at concentrations that are representative of background. The adjusted cumulative HI (i.e., the cumulative HI adjusted to exclude the contributions of naturally-occurring metals present at concentrations representative of background) for the residential receptor is 0.3.

#### *7.4.1.2 Occupational Worker*

The non-cancer HQs and HIs associated with potential exposure by onsite occupational workers are presented in Appendix F, Table F-22. The non-cancer HI for occupational workers exposed to all of the COPCs in soil and soil vapor at the Site is 0.7. Arsenic is the only COPC that results in a HI estimate greater than or equal to 0.1. Incidental ingestion of soil represents the primary exposure pathway and accounts for approximately 73% of the cumulative HI. Cumulative HI estimates for dermal contact, inhalation of fugitive dust, and inhalation of vapors in ambient air range from 0.2 (dermal contact) to 0.0007 (inhalation of vapors in ambient air).

Approximately 96% of the cumulative HI estimate is related to metals (e.g., arsenic) that occur at concentrations that are representative of background. The adjusted cumulative HI (i.e., the cumulative HI adjusted to exclude the contributions of naturally-occurring metals present at concentrations representative of background) for the occupational worker receptor is 0.03.

#### *7.4.1.3 Construction Worker*

The non-cancer HQs and HIs associated with potential exposure by an onsite construction worker are presented in Appendix F, Table F-24. The non-cancer HI for construction workers exposed to all of the COPCs in soil and soil vapor at the Site is 3. Individual COPCs resulting in HI estimates greater than or equal to 0.1 include arsenic (2) and cobalt (0.2). Incidental ingestion of soil represents the primary exposure pathway and accounts for approximately 70% of the cumulative HI. Cumulative HI estimates for dermal contact, inhalation of fugitive dust, and inhalation of vapors in ambient air range from 0.7 (dermal contact) to 0.0007 (inhalation of vapors in ambient air).

Approximately 96% of the cumulative HI estimate is related to metals (e.g., arsenic) that occur at concentrations that are representative of background. The adjusted cumulative HI (i.e., the cumulative HI adjusted to exclude the contributions of naturally-occurring metals present at concentrations representative of background) for the construction worker receptor is 0.1.

### 7.4.2 Carcinogenic Health Effects

Carcinogenic risks are estimated as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a potential carcinogen. The SF converts estimated daily intakes averaged over a lifetime of exposure to incremental risk of an individual developing cancer (USEPA, 1989). This lifetime incremental cancer risk generally represents an upper-bound value since the slope factor is often a 95% UCL of probability of response based on experimental animal data.

The USEPA and CalEPA have defined what is considered to be an acceptable level of risk in similar, though slightly different, ways. The USEPA considers one in one million ($1\times10^{-6}$) to one in ten thousand ($1\times10^{-4}$) to be the target range for acceptable risk (USEPA, 1990a, 1990b). Estimates of lifetime excess cancer risk associated with exposure to chemicals of less than $1\times10^{-6}$ are considered *de minimis,* a risk level that is so low as to not warrant any further investigation or analysis (USEPA, 1990a). Within the State of California, CalEPA also generally targets the same range for acceptable risks.

It should be noted that cancer risks in the $1\times10^{-6}$ to $1\times10^{-4}$ range or higher do not necessarily mean that adverse health effects will be observed. To further characterize carcinogenic health risks for occupational and construction workers, a target risk of $1x10^{-5}$ was also used for comparison.

### *7.4.2.1 Residential Receptor*

The cancer risks associated with potential exposure by the onsite residential receptors are presented in Appendix F, Table F-21. The upper-bound cumulative lifetime incremental cancer risks for residential receptors potentially exposed to all of the COPCs in soil and soil vapor at the Site is $3x10^{-5}$. Arsenic is the only individual COPC that results in an incremental cancer risk estimate greater than or equal to $1x10^{-6}$ and accounts for approximately 94% of the cumulative risk. Incidental ingestion of soil represents the primary exposure pathway and accounts for approximately 87% of the cumulative risk estimate. Cumulative risk estimates for dermal contact, inhalation of fugitive dust, and inhalation of vapors in indoor and ambient air range from $2x10^{-6}$ (dermal contact) to $1x10^{-7}$ (inhalation of vapors in ambient air).

Approximately 94% of the cumulative risk estimate is related to metals (e.g., arsenic) that occur at concentrations that are representative of background. The adjusted cumulative risk estimate (i.e., the cumulative incremental cancer risk adjusted to exclude the contributions of naturally-occurring metals present at concentrations representative of background) for the residential receptor is $2x10^{-6}$. For the adjusted risk estimates, no single COPC or exposure pathway results in an incremental cancer risk estimate in excess of $1x10^{-6}$. The cumulative lifetime incremental cancer risk for the residential receptor is within the range of acceptable risks.

Inhalation of vapors in indoor or ambient air results in cumulative incremental cancer risk estimates of $1x10^{-7}$ and $6x10^{-7}$, respectively. It should be noted that each of these estimates are based on 24-hour/day exposures and would not be additive. Additional conservatism associated with the inhalation of vapors is introduced by the use of the maximum detected soil vapor concentrations to estimate potential exposure point concentrations in indoor and ambient air. In any event, inhalation of vapors in indoor or ambient air is not considered a significant route of exposure and does not warrant additional mitigation or analysis.

### *7.4.2.2 Occupational Worker*

The upper-bound cumulative lifetime incremental cancer risks associated with potential exposure by onsite occupational workers are presented in Appendix F, Table F-23. The upper-bound cumulative lifetime incremental cancer risks for an occupational receptor potentially exposed to all of the COPCs in soil and soil vapor at the Site is $8x10^{-6}$. Arsenic is the only individual COPC that results in an incremental cancer risk estimate greater than or equal to $1x10^{-6}$ and accounts for approximately 95% of the cumulative risk. Incidental ingestion of soil represents the primary exposure pathway and accounts for approximately 73% of the cumulative risk estimate. Cumulative risk estimates for dermal contact, inhalation of fugitive dust, and inhalation of vapors in ambient air range from $2x10^{-6}$ (dermal contact) to $2x10^{-8}$ (inhalation of vapors in ambient air).

Approximately 96% of the cumulative risk estimate is related to metals (e.g., arsenic) that occur at concentrations that are representative of background. The adjusted cumulative risk estimate (i.e., the cumulative incremental cancer risk adjusted to exclude the contributions of naturally-occurring metals present at concentrations representative of background) for the occupational worker is $3x10^{-7}$. For the adjusted risk estimates, no single COPC or exposure pathway results in an incremental cancer risk estimate in excess of $1x10^{-6}$. The cumulative lifetime incremental cancer risk for the occupational worker is within the range of acceptable risks.

Inhalation of vapors in ambient air results in a cumulative incremental cancer risk estimate of $2x10^{-8}$. Consequently, inhalation of vapors in ambient air is not considered a significant route of exposure and does not warrant additional mitigation or analysis for the occupational receptor scenario.

#### *7.4.2.3 Construction Worker*

The upper-bound cumulative lifetime incremental cancer risks associated with potential exposure by an onsite construction worker are presented in Appendix F, Table F-25. The upper-bound cumulative lifetime incremental cancer risks for a construction worker receptor potentially exposed to all of the COPCs in soil and soil vapor at the Site is $1x10^{-6}$. Arsenic is the only individual COPC that results in an incremental cancer risk estimate greater than or equal to $1x10^{-6}$ and accounts for approximately 96% of the cumulative risk. Incidental ingestion of soil represents the primary exposure pathway and accounts for approximately 70% of the cumulative risk estimate. Cumulative risk estimates for dermal contact, inhalation of fugitive dust, and inhalation of vapors in ambient air range from $3x10^{-7}$ (dermal contact) to $9x10^{-10}$ (inhalation of vapors in ambient air).

Approximately 96% of the cumulative risk estimate is related to metals (e.g., arsenic) that occur at concentrations that are representative of background. The adjusted cumulative risk estimate (i.e., the cumulative incremental cancer risk adjusted to exclude the contributions of naturally-occurring metals present at concentrations representative of background) for the construction worker receptor is $4x10^{-8}$. For the adjusted risk estimates, no single COPC or exposure pathway results in an incremental cancer risk estimate in excess of $1x10^{-6}$. The cumulative lifetime incremental cancer risk for the construction worker receptor is within the range of acceptable risks.

Inhalation of vapors in ambient air results in a cumulative incremental cancer risk estimate of $9x10^{-10}$. Consequently, inhalation of vapors in ambient air is not considered a significant route of exposure and does not warrant additional mitigation or analysis for the construction worker receptor scenario.

## 7.5 UNCERTAINTIES AND LIMITATIONS

There is a certain degree of uncertainty in estimating exposures to chemicals in the environment. To account for these uncertainties, the risk assessment methodology was designed to be conservative. Where values are uncertain because of a lack of site-specific data, regulatory agency default values and/or conservative values were used. Specific sources of conservatism associated with this HHRA are discussed below:

- The exposure assessment performed as a component of this analysis incorporates a number of assumptions regarding the current or future presence of receptors and the frequency and duration of activities that may result in exposure to the receptors. The exposure factors utilized in calculating exposures and risks are intended to provide a reasonable upper-bound estimate of exposure for the receptors and exposure pathways considered. While these assumptions are unlikely to underestimate exposure and risk, alternative assumptions based on average or most-likely conditions could yield lower estimates of exposure and risk. For example, the actual period of time that a residential receptor, occupational worker, or construction worker would be involved in direct contact with soils is anticipated to be substantially less than the exposure frequency and duration utilized in this HHRA.

- Some of the toxicity values utilized in this HHRA involve the extrapolation of results from animal studies. When the results of these animal studies are extrapolated to humans, safety factors or other conservative assumptions are typically applied to ensure that human health effects are not underestimated. For carcinogenic effects, the risk assessment methodology assumes the absence of a threshold dose.

- Exposures and associated risks resulting from contact with multiple COPCs were conservatively assumed to be additive. Furthermore, the additivity of risk was assumed to apply without regard to health effects endpoints (e.g., target organs, tumor type, toxic endpoint, or mode of action). If the health effects endpoints were considered, the cumulative risks would be lower than the values presented in this assessment.

- All chemicals detected in soil and soil vapor were retained as COPCs regardless of frequency of detection or concentration relative to background. Certain naturally-occurring metals contribute significantly to the cumulative exposure and non-carcinogenic risk estimates. Review of cumulative exposure and risk estimates should consider the influence of naturally-occurring metals and the representative contribution to the cumulative risk associated with background concentrations of these constituents. This assessment has attempted to illustrate the relative contribution of naturally-occurring elements by presenting adjusted hazard index and cancer risk estimates for all COPCs and the subset of COPCs that may be considered to be site-related.

- Exposure point concentrations for COPCs in fugitive dust were estimated utilizing standardized equations for wind erosion. While this approach is reasonable in the absence of suitable data derived from air sampling and gravimetric analysis, the actual concentrations of dust may be different. In general, the estimated concentrations of COPCs in fugitive dust predicted in this assessment are anticipated to be higher than the actual concentrations.

- Limited soil vapor analytical data was available for use in the quantitative portion of this assessment. In consideration of the paucity of soil vapor data, the maximum concentrations of VOCs detected in soil vapor were used to estimate the concentrations of VOCs in indoor air and/or ambient air. While this approach is reasonable, the approach likely results in higher estimates of exposure and risk for the scenarios evaluated.

- Potential exposures and risks were calculated using initial site assessment data and/or confirmation samples obtained in the remedial excavation areas. Use of data collected as confirmation samples from remedial excavation areas may tend to overestimate the exposure point concentrations as these data are biased toward portions of the site that were the subject of remediation activities.

- The site-wide 95% UCL was selected as the EPC for a portion of the COPCs in soil for the purpose of the health risk evaluation. It should be noted that the maximum detected concentrations of cadmium, mercury, molybdenum, silver, TPH diesel, acetone, and isopropyltoluene were used as the soil EPCs in this evaluation. In addition, the maximum concentrations of VOCs detected in soil vapor were used as the basis for evaluating potential inhalation exposures (including vapor intrusion risks). Although the Site is 62 acres in size, the future development of the Site will involve significant grading and movement of soil, and would result in disturbance and some homogenization of soil such that the potential existence of localized "hot spots" associated with the maximum concentrations would no longer exist. Use of the 95% UCL as the EPCs combined with the assumption of additivity of risk is believed to provide a reasonable estimate of the upper-bound exposures and risks. Conversely, use of the maximum concentrations of COPCs detected in post-remediation samples along with the assumption of additivity would improperly imply that the maximum concentrations are co-located within an area where continuous exposure may occur. The locations of the maximum concentrations of PCBs and TCDD equivalent are separated by a distance of greater than 800 feet. At present, a development plan has not been generated, so it is not possible to develop EPCs for smaller decision units. For discussion purposes, TRC calculated potential risks based on the maximum concentrations of COPCs detected in soil. Under the residential exposure scenario and using the maximum detected concentrations of COPCs, the cumulative lifetime incremental cancer risk would be approximately $6\times10^{-6}$ (adjusted to exclude arsenic, beryllium, nickel, and vanadium). This value is approximately 3 times higher than the cumulative risk based on the 95% UCL EPC values. If risks associated with the maximum concentration of an individual COPC were considered, the only COPCs that would result in a lifetime incremental cancer risk equal to or greater than

$1x10^{-6}$ (excluding arsenic) are PCBs ($3.7x10^{-6}$) and TCDD equivalent ($1x10^{-6}$). Consequently, the upper-bound residential risk would be on the order of $4x10^{-6}$ (based on the maximum detected concentration of PCBs).

- This assessment presumes that all areas of the site would be potentially available for contact by the residential, commercial, and construction worker receptors. This assumption does not account for the future presence of engineered surfaces, buildings, or the presence of vegetation across the site. These features could serve to further reduce potential exposures. However, the statistical methodology utilized to establish potential exposure point concentrations for the purpose of the quantitative health risk assessment is believed to be reasonable and appropriate regardless of the future site development activities.

## 7.6 HUMAN HEALTH RISK ASSESSMENT CONCLUSIONS

This HHRA was conducted to evaluate the potential human health risks associated with future exposures to COPCs that were detected in soil and soil vapor under post-remediation Site conditions. For the purpose of this assessment, the COPCs include both naturally-occurring elements (e.g., metals), a subset of COPCs that were the primary focus of remedial response activities (i.e., PCBs and dioxins/furans), and other COPCs (e.g., VOCs and TPH) that were detected in soil samples collected during previous site assessment activities or in remedial confirmation samples. The results of the HHRA indicate that naturally-occurring elements contribute most significantly to the cumulative non-carcinogenic and carcinogenic risk estimates. Adjustment of the cumulative risk estimates to exclude the contributions of naturally-occurring elements provides a more accurate representation of post-remediation conditions as related to the future development and use of the property. Based on the quantitative results of the HHRA, TRC offers the following conclusions with regard to the future development and use of the subject property:

- **Future Residential Use**: The cumulative non-carcinogenic hazard index associated with the future use of the property for residential purposes, adjusted to consider site-related COPCs, is 0.3. This value is less than the acceptable hazard index of 1.0. Consequently, no adverse health impacts are anticipated to occur as a result of exposure to future site residents (including children). The cumulative HIs for COPCs that are presumed to be site-related and were the focus of remedial excavation activities (i.e., dioxins/furans and PCBs), range from 0.004 (TCDD equivalents) to 0.09 (total PCBs). The upper-bound lifetime incremental cancer risk associated with potential exposure to dioxins/furans and PCBs under a future residential land-use scenario is approximately $8x10^{-7}$. This value is within or below the range of risks that are typically considered to be acceptable for residential land uses. Based on the quantitative results of this HHRA, the post-remediation concentrations of site-related COPCs do not pose a significant threat to future residents. In addition, inhalation of VOCs in ambient or indoor air do not pose a significant threat to future site residents. Consequently, the remedial activities completed at the site should allow for unrestricted development and use of the property.

- **Future Commercial Use**. The cumulative non-carcinogenic hazard index associated with the future use of the property for commercial purposes, adjusted to consider site-related COPCs, is 0.03. This value is less than the acceptable hazard index of 1.0. Consequently, no adverse health impacts are anticipated to occur as a result of exposure to future commercial workers. The cumulative HIs for COPCs that are presumed to be site-related and were the focus of remedial excavation activities (i.e., dioxins/furans and PCBs), range from 0.0004 (TCDD equivalents) to 0.01 (total PCBs). The upper-bound lifetime incremental cancer risk associated with potential exposure to dioxins/furans and PCBs under a future commercial land-use scenario is approximately $3 \times 10^{-7}$. This value is below the range of risks that are typically considered to be acceptable for commercial land uses. Based on the quantitative results of this HHRA, the post-remediation concentrations of site-related COPCs do not pose a significant threat to future commercial receptors. In addition, inhalation of VOCs in ambient or indoor air do not pose a significant threat to future commercial occupants. No additional mitigation or risk management measures are warranted for VOCs.

- **Future Construction Workers**. The cumulative non-carcinogenic hazard index associated with construction-related exposures that may occur during future development of the property, adjusted to consider site-related COPCs, is 0.1. This value is less than the acceptable hazard index of 1.0. Consequently, no adverse health impacts are anticipated to occur as a result of construction-related exposures during future site development. The cumulative HIs for COPCs that are presumed to be site-related and were the focus of remedial excavation activities (i.e., dioxins/furans and PCBs), range from 0.001 (TCDD equivalents) to 0.05 (total PCBs). The upper-bound lifetime incremental cancer risk associated with potential exposure to dioxins/furans and PCBs during future site construction is approximately $3 \times 10^{-8}$. This value is below the range of risks that are typically considered to be acceptable for construction-related exposures. Based on the quantitative results of this HHRA, the post-remediation concentrations of site-related COPCs do not pose a significant threat to future construction workers. Although no additional mitigation or risk management measures are warranted for future construction workers, site development activities should be conducted in a manner to minimize the potential migration of dust during site grading and excavation activities. Adherence to standard environmental procedures related to dust and stormwater control should be maintained by contractors engaged in future site development activities. In addition, it is recommended that a construction contingency plan be developed to address previously undiscovered site conditions that may warrant additional investigation, analysis or mitigation.

## 8.0 CONCLUSIONS

Phase 2 remedial excavation of soil with contaminant concentrations exceeding residential cleanup levels, conducted from July 2013 through January 2014, has been completed and is summarized herein. Phase 1 remedial excavation activities were previously completed in July 2009 and are summarized in the TRC *Phase I Response Plan Implementation Report* dated June 2010. Based on the findings of confirmation soil sampling activities conducted upon completion of Phase 2 remedial excavation in the identified areas onsite, it appears that soil impacts in excess of specified cleanup levels (includes PCBs, metals, and dioxins/furans) have been effectively removed. Furthermore, findings and conclusions of the post-remediation HHRA presented herein indicate that residual soil concentrations do not pose a risk to future residential development of the property. As a result of these findings, TRC requests environmental case closure for this Site.

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**TABLES**

**Table 1**
**PCB Confirmation Sample Results**
**Former Agricultural Park, Riverside, California**

| Phase 2 Confirmation Samples | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action |
| **Southern Area** | | | | | | | | | | | | | | | | | | | | | | | | |
| CS1 | 1 | 11/15/2013 | 1.7 | Step down 2' & retest | CS1 | 2 | 12/3/2013 | 4.6 | Step down 1' & retest | CS1 | 3 | 12/11/2013 | ND | NFA | | | | | | | | | | |
| CS1CA | 3 | 12/19/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS1CB | 3 | 12/19/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS2N | 1.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS3E | 1.5 | 12/11/2013 | 1.7 | Step out 10' & retest | CS3Ea | 1.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS4S | 1.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS5W | 1.5 | 12/11/2013 | 0.14 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS6C | 2.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS7 | 1 | 8/8/2013 | 0.31 | Step down 1' & retest | CS7 | 2 | 12/3/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS7CA | 2 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS7CB | 2 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS8 | 1 | 8/8/2013 | 0.20 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS9 | 1 | 11/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS10 | 1 | 11/15/2013 | 0.10 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS11 | 1 | 11/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS12 | 1 | 11/15/2013 | 0.085 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS13 | 1 | 11/15/2013 | 0.064 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS14 | 1 | 11/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS15 | 1 | 11/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS16 | 1 | 11/15/2013 | 0.42 | Step down 1' & retest | CS16 | 2 | 12/3/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS16CA | 2 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS16CB | 2 | 12/12/2013 | 1.4 | Step down 1' & retest | CS16CB | 4 | 12/19/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS17 | 1 | 11/15/2013 | 0.052 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS18 | 1 | 11/19/2013 | 0.15 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS19 | 1 | 8/9/2013 | 1.5 | Step out 20' in each direction & retest | CS19Na | 3 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS19Sa | 2.5 | 11/26/2013 | 0.22 | Step out 10' & retest | Step out merged with larger Brine Basin excavation. | | | | | | | | | | | | | | |
| | | | | | CS19Wa | 3.5 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS19C | 6 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS20 | 2 | 8/8/2013 | 0.43 | Step down 1' & retest | CS20 | 2.5 | 11/15/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS21N | 1 | 8/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS22E | 1 | 8/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS23S | 1 | 8/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS24W | 1 | 8/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS25C | 2 | 8/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS26N | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS27E | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS28S | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS29W | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS30C | 3 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS31N | 2 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS32E | 2 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS33S | 2 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS34W | 2 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS35C | 4 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS36N | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS37E | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS38S | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS39W | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS40C | 3 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS41 | 3 | 8/8/2013 | 200 | Step down 2' & retest | CS41 | 6 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS42 | 3 | 8/8/2013 | 48 | Step down 2' & retest | CS42 | 8.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS43 | 3 | 8/8/2013 | 9.3 | Step down 1' & retest | CS43 | 4 | 11/19/2013 | 2.4 | Step down 2' & retest | CS43 | 5 | 12/3/2013 | ND | NFA | | | | | | | | | | |
| CS43E | 2.5 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS43S | 2.5 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS43W | 2.5 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS44 | 3 | 8/8/2013 | 2.5 | Step down 5' & retest | CS44 | 8.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS45 | 3 | 8/8/2013 | 3.0 | Step down 5' & retest | CS45 | 8.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS46 | 3 | 8/9/2013 | 1.7 | Step down 5' & retest | CS46 | 8.5 | 11/5/2013 | 6.2 | Step down 2' & retest | CS46 | 10.5 | 11/8/2013 | ND | NFA | | | | | | | | | | |
| CS46Na | 9.5 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS46Ea | 9.5 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS46Sa | 9.5 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS46Wa | 9.5 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS47 | 3 | 8/8/2013 | 9.8 | Step down 5' & retest | CS47 | 8.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS48 | 3 | 8/8/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS49 | 3 | 8/8/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS50 | 1 | 8/8/2013 | 2.0 | Step down 7' & retest | CS50 | 8.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS51N | 6 | 8/8/2013 | 8.1 | Step out 10' & retest | CS51Na | 7 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS52E | 6 | 8/8/2013 | 13 | Step out 10' & retest | CS52Ea | 7 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS53S | 6 | 8/8/2013 | 11 | Step out 10' & retest | CS53Sa | 7 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS54W | 6 | 8/8/2013 | 6.9 | Step out 10' & retest | CS54Wa | 7 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS55C | 6 | 8/8/2013 | 12 | Step down 2' & retest | CS55Ca | 8 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS56 | 1 | 8/22/2013 | 0.08 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS57 | 1 | 8/9/2013 | 3.8 | Step down 1' & retest | CS57 | 2 | 11/27/2013 | 0.11 | NFA | | | | | | | | | | | | | | | |
| CS58 | 1 | 8/9/2013 | 0.69 | Step down 1' & retest | CS58 | 2 | 11/8/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS58Ea | 3 | 11/14/2013 | 1.1 | Step out 10' & retest | CS58Eb | 3 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS58Sa | 2 | 11/14/2013 | 0.84 | Step out 10' & retest | CS58Sb | 3 | 11/26/2013 | 0.24 | Step out 10' & retest | CS58Sc | 3 | 12/6/2013 | 22 | Step out 10' & retest | CS58Sd | 4 | 12/12/2013 | 0.12 | NFA | | | | | |
| CS58Na | 2 | 11/14/2013 | 1.2 | Step out 10' & retest | CS58Nb | 2 | 11/26/2013 | 0.087 | NFA | | | | | | | | | | | | | | | |
| CS59 | 1 | 8/14/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS60 | 1 | 8/14/2013 | 0.26 | Step out 20' in each direction & retest | CS60Na | 1 | 10/2/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS60Sa | 1 | 10/2/2013 | 0.077 | NFA | | | | | | | | | | | | | | | |
| | | | | | CS60Ea | 1 | 10/2/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS60Wa | 1 | 10/2/2013 | 1.1 | Step out 20' & retest | CS60Wb | 1 | 10/8/2013 | 0.10 | NFA | | | | | | | | | | |
| | | | | | CS60Ca | 2 | 10/2/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS61 | 1 | 12/5/2013 | 1.8 | Step down 1' & retest | CS61 | 3 | 12/18/2013 | ND | NFA | CS61CA | 3 | 12/26/2013 | ND | NFA | CS61CB | 3 | 12/26/2013 | ND | NFA | | | | | |
| CS62 | 1 | 8/14/2013 | 14 | Step down 1' & retest | CS62 | 2 | 12/19/2013 | 4 | Step down 2' & retest | CS62 | 4 | 12/26/2013 | ND | NFA | CS62CA | 4 | 1/3/2014 | ND | NFA | CS62CB | 4 | 1/3/2014 | ND | NFA |
| CS63 | 1 | 8/14/2013 | 8.2 | Step out 20' in each direction & retest | CS63Na | 1 | 10/2/2013 | 25 | Step out 20' & retest | CS63Nb | 1 | 10/8/2013 | 63 | Step out 20' & retest | CS63Nc | 1 | 10/11/2013 | 32 | Step down 1' & retest | CS63Nc | 3 | 10/18/2013 | 0.073 | NFA |
| | | | | | CS63Sa | 1 | 10/2/2013 | 10 | Step out 20' & retest | CS63Sb | 1 | 10/8/2013 | 0.56 | Step out 20' & retest | CS63Sc | 1 | 12/19/2013 | 3.9 | Step out 20' & retest | CS63Sd | 1 | 12/26/2013 | 0.15 | NFA |
| | | | | | CS63Ea | 1 | 10/2/2013 | 0.065 | NFA | | | | | | | | | | | | | | | |
| | | | | | CS63Wa | 1 | 10/2/2013 | 2.9 | Step out 20' & retest | CS63Wb | 1 | 10/8/2013 | 1.7 | Step out 20' & retest | CS63Wc | 1 | 10/11/2013 | 2.8 | Step down 1' & retest | CS63Wc | 2 | 10/18/2013 | ND | NFA |
| | | | | | CS63Ca | 2 | 10/2/2013 | 0.11 | NFA | | | | | | | | | | | | | | | |



ED_005263_00000839-00044

# Table 1
## PCB Confirmation Sample Results
## Former Agricultural Park, Riverside, California

| Phase 2 Confirmation Samples | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action |
| CS64 | 1 | 12/5/2013 | 0.67 | Step down 1' & retest | CS64 | 3 | 12/18/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS64CA | 3 | 12/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS64CB | 3 | 12/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS65 | 1 | 12/19/2013 | 0.19 | NFA | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Western Gully** | | | | | | | | | | | | | | | | | | | | | | | | |
| CS100 | 2.5 | 9/23/2013 | ND | NFA | CS100 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS101 | 2.5 | 9/23/2013 | ND | NFA | CS101 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS102 | 2.5 | 9/23/2013 | ND | NFA | CS102 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS103 | 2.5 | 9/23/2013 | ND | NFA | CS103 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS104 | 2.5 | 9/23/2013 | ND | NFA | CS104 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS105 | 2.5 | 9/23/2013 | ND | NFA | CS105 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS106 | 2.5 | 9/23/2013 | ND | NFA | CS106 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS107 | 2.5 | 9/23/2013 | 2.0 | Step down 1' & retest | CS107 | 3.5 | 9/23/2013 | 0.20 | NFA | | | | | | | | | | | | | | | |
| CS108 | 2.5 | 9/23/2013 | 2.2 | Step down 1' & retest | CS108 | 3.5 | 9/23/2013 | 67 | Step down 2' & retest | CS108 | 5.5 | 9/30/2013 | 3.5 | Step down 1' & retest | CS108 | 6.5 | 10/4/2013 | 0.18 | NFA | | | | | |
| CS108Na | 4.5 | 11/18/2013 | 0.052 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS108Ea | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS108Sa | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS108Wa | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS109 | 2.5 | 9/9/2013 | 48 | Step out & retest | CS109 | 2.5 | 9/23/2013 | 1.4 | Step down 1' & retest | CS109 | 3.5 | 9/23/2013 | 4.3 | Step down 1' & retest | CS109 | 4.5 | 9/30/2013 | 0.060 | NFA | | | | | |
| CS110 | 2.5 | 9/23/2013 | 0.30 | Step down 1' & retest | CS110 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS111 | 2.5 | 9/23/2013 | 0.94 | Step down 1' & retest | CS111 | 3.5 | 9/23/2013 | 3.2 | Step down 1' & retest | CS111 | 4.5 | 9/30/2013 | 0.096 | NFA | | | | | | | | | | |
| CS112 | 2.5 | 9/9/2013 | 25 | Step out & retest | CS112 | 2.5 | 9/23/2013 | ND | NFA | CS112 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | |
| CS112Na | 2 | 12/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS112Ea | 2 | 12/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS112Sa | 2 | 12/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS112Wa | 2 | 12/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS113 | 2.5 | 9/23/2013 | 6.1 | Step down 1' & retest | CS113 | 3.5 | 9/23/2013 | 230 | Step down 2' & retest | CS113 | 5.5 | 9/30/2013 | 0.33 | Step down 2' & retest | CS113 | 6.5 | 10/4/2013 | ND | NFA | | | | | |
| CS113Na | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS113Ea | 4.5 | 11/18/2013 | 0.051 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS113Sa | 4.5 | 11/18/2013 | 0.083 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS113Wa | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS114 | 2.5 | 9/23/2013 | ND | NFA | CS114 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS115 | 2.5 | 9/23/2013 | 6.5 | Step down 1' & retest | CS115 | 3.5 | 9/23/2013 | 3.7 | Step down 1' & retest | CS115 | 4.5 | 9/30/2013 | 0.42 | Step down 1' & retest | CS115 | 5.5 | 10/4/2013 | 4.4 | Step down 1' & retest | CS115 | 6.5 | 10/11/2013 | ND | NFA |
| CS115Na | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS115Ea | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS115Sa | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS115Wa | 4.5 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS116 | 4 | 9/9/2013 | 0.63 | Step out & retest | CS116 | 2.5 | 9/23/2013 | ND | NFA | CS116 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | |
| CS117 | 2.5 | 9/23/2013 | 17 | Step down 1' & retest | CS117 | 3.5 | 9/23/2013 | 0.81 | Step down 1' & retest | CS117 | 4.5 | 9/30/2013 | 8.5 | Step down 1' & retest | CS117 | 5.5 | 10/4/2013 | ND | NFA | | | | | |
| CS117Na | 3 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS117Ea | 3 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS117Sa | 3 | 11/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS117Wa | 3 | 11/18/2013 | 0.084 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS118 | 2.5 | 9/23/2013 | ND | NFA | CS118 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS119 | 2.5 | 9/23/2013 | 34 | Step down 1' & retest | CS119 | 3.5 | 9/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS119Na | 2 | 12/10/2013 | 0.38 | Step out 10' & retest | CS119Nb | 2 | 12/17/2013 | 0.55 | Step out 10' & retest | CS119Nc | 2 | 12/26/2013 | 4.4 | Step out 10' & retest | CS119Nd | 2 | 1/3/2014 | 0.25 | Step out 10' & retest | CS119Ne | 2 | 1/8/2014 | ND | NFA |
| CS119Ea | 3 | 12/10/2013 | 0.22 | Step out 10' & retest | CS119Eb | 3 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS119Sa | 3 | 12/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS120 | 1.5 | 9/18/2013 | 2.2 | Step down 1' & retest | CS120 | 2.5 | 9/18/2013 | 0.17 | NFA | | | | | | | | | | | | | | | |
| CS121 | 0 | 10/8/2013 | ND | NFA | CS121 | 1 | 10/8/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS122 | 0 | 10/8/2013 | 0.59 | Step down 1' & retest | CS122 | 1 | 10/8/2013 | 0.45 | Step down 1' & retest | CS122 | 2 | 10/11/2013 | 0.28 | Step down 1' & retest | CS122 | 3 | 10/18/2013 | ND | NFA | | | | | |
| CS122Ea | 3 | 11/14/2013 | 0.44 | Step out 10' & retest | CS122Eb | 3 | 11/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS122Na | 1.5 | 11/14/2013 | 0.46 | Step out 10' & retest | CS122Nb | 1.5 | 11/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS122Wa | 1.5 | 11/14/2013 | 0.19 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS122Sa | 3 | 11/14/2013 | 1.0 | Step out 10' & retest | CS122Sb | 3 | 11/20/2013 | 0.10 | NFA | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Eastern Gully** | | | | | | | | | | | | | | | | | | | | | | | | |
| CS200 | 1.5 | 9/17/2013 | 8.7 | Step down 1' & retest | CS200 | 2.5 | 9/17/2013 | 1.2 | Step down 1' & retest | CS200 | 3.5 | 9/20/2013 | 0.21 | NFA | | | | | | | | | | |
| CS201N | 3 | 9/5/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS202E | 3 | 9/5/2013 | 2.9 | Step out 10' & retest | CS202E | 3.5 | 1/14/2014 | 18 | Step out 10' & retest | CS202Ea | 7.5 | 1/16/2014 | ND | NFA | | | | | | | | | | |
| CS203S | 3 | 9/5/2013 | 6.0 | Step out 10' & retest | CS203S | 3.5 | 1/14/2014 | 2.5 | Step out 10' & retest | CS203Sa | 7.5 | 1/16/2014 | ND | NFA | | | | | | | | | | |
| CS204W | 3 | 9/5/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS205C | 4 | 9/5/2013 | 7.8 | Step down 2' & retest | CS205C | 6 | 12/26/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS206 | 1.5 | 9/17/2013 | 3.4 | Step down 1' & retest | CS206 | 2.5 | 9/17/2013 | 0.34 | Step down 1' & retest | CS206 | 3.5 | 9/20/2013 | 1.0 | Step down 1' & retest | CS206 | 4.5 | 9/30/2013 | ND | NFA | | | | | |
| CS207 | 1.5 | 9/17/2013 | ND | NFA | CS207 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS208 | 1.5 | 9/17/2013 | 4.2 | Step down 1' & retest | CS208 | 2.5 | 9/17/2013 | 0.13 | NFA | | | | | | | | | | | | | | | |
| CS209 | 1.5 | 9/17/2013 | ND | NFA | CS209 | 2.5 | 9/17/2013 | 0.16 | NFA | | | | | | | | | | | | | | | |
| CS210 | 1.5 | 9/17/2013 | 0.34 | Step down 1' & retest | CS210 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS211 | 1.5 | 9/17/2013 | 4.5 | Step down 1' & retest | CS211 | 2.5 | 9/17/2013 | 1.4 | Step down 1' & retest | CS211 | 3.5 | 9/24/2013 | ND | NFA | | | | | | | | | | |
| CS212 | 2.5 | 8/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS213 | 1.5 | 9/17/2013 | ND | NFA | CS213 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS214 | 1.5 | 9/17/2013 | 1.8 | Step down 1' & retest | CS214 | 2.5 | 9/17/2013 | 130 | Step down 1' & retest | CS214 | 4.5 | 9/24/2013 | 0.12 | NFA | | | | | | | | | | |
| CS215 | 2.5 | 8/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS216 | 1.5 | 9/17/2013 | ND | NFA | CS216 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS217 | 1.5 | 9/17/2013 | ND | NFA | CS217 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS218 | 1.5 | 9/17/2013 | 2.3 | Step down 1' & retest | CS218 | 2.5 | 9/17/2013 | 1.2 | Step down 1' & retest | CS218 | 3.5 | 9/24/2013 | 0.34 | Step down 1' & retest | CS218 | 4.5 | 10/1/2013 | 0.085 | NFA | | | | | |
| CS219 | 2.5 | 8/9/2013 | 0.28 | Excavate 20 x 20 x 1 and retest | CS219Na | 3.5 | 8/22/2013 | 0.086 | NFA | | | | | | | | | | | | | | | |
| | | | | | CS219Sa | 3.5 | 8/22/2013 | 1.7 | Excavate 20 x 20 x 1 and retest | CS219Sb | 4.5 | 8/30/2013 | ND | NFA | CS219Sc | 4.5 | 8/30/2013 | ND | NFA | | | | | |
| CS220 | 1.5 | 9/17/2013 | 55 | Step down 1' & retest | CS220 | 2.5 | 9/17/2013 | 1.6 | Step down 1' & retest | CS220 | 3.5 | 9/24/2013 | 0.11 | NFA | | | | | | | | | | |
| CS221 | 1.5 | 9/17/2013 | ND | NFA | CS221 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS222 | 2.5 | 8/15/2013 | 0.76 | Step out 20' in each direction & retest | CS222Wa | 3.5 | 8/28/2013 | 1.2 | Excavate 20 x 20 x 1 and retest | CS222 | 4.5 | 11/4/2013 | 1.1 | Step down 2' & retest | CS222 | 6.5 | 11/8/2013 | ND | NFA | | | | | |
| | | | | | CS222Ea | 3.5 | 8/28/2013 | 1.2 | Step down 2' & retest | CS222Eb | 5.5 | 1/3/2014 | ND | NFA | CS222Ec | 3 | 1/8/2014 | ND | NFA | | | | | |
| CS223 | 1.5 | 9/17/2013 | ND | NFA | CS223 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS224 | 1.5 | 9/17/2013 | 0.65 | Step down 1' & retest | CS224 | 2.5 | 9/17/2013 | 1.1 | Step down 1' & retest | CS224 | 3.5 | 9/24/2013 | 0.11 | NFA | | | | | | | | | | |
| CS225 | 1.5 | 9/17/2013 | ND | NFA | CS225 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS226 | 1.5 | 9/18/2013 | 0.13 | NFA | CS226 | 2.5 | 9/18/2013 | 0.10 | NFA | | | | | | | | | | | | | | | |
| CS227 | 1.5 | 9/17/2013 | ND | NFA | CS227 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS228 | 1.5 | 9/18/2013 | ND | NFA | CS228 | 2.5 | 9/18/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS229 | 1.5 | 9/18/2013 | 0.20 | NFA | CS229 | 2.5 | 9/18/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS230 | 1.5 | 9/18/2013 | ND | NFA | CS230 | 2.5 | 9/18/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS231N | 2.5 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |

**Table 1**
**PCB Confirmation Sample Results**
**Former Agricultural Park, Riverside, California**

| Phase 2 Confirmation Samples | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action |
| CS232E | 2.5 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS233S | 2.5 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS234W | 2.5 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS235 | 1.5 | 9/17/2013 | ND | NFA | CS235 | 2.5 | 9/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **No Excavation Area** | | | | | | | | | | | | | | | | | | | | | | | | |
| CS236N | 1.5 | 8/15/2013 | 0.25 | Step out 10' & retest | CS236Na | 2.5 | 8/28/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS237E | 1.5 | 8/15/2013 | 0.67 | Step out 10' & retest | CS237Ea | 2.5 | 8/28/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS238S | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS239W | 1.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS240C | 3 | 8/15/2013 | 0.12 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS241N | 0.5 | 10/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS242E | 0.5 | 10/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS243S | 0.5 | 10/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS244W | 0.5 | 10/11/2013 | 0.081 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS245C | 1 | 10/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Sewer Plant Area and Plateau** | | | | | | | | | | | | | | | | | | | | | | | | |
| CS300 | 2.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS301 | 2.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS302 | 2.5 | 11/15/2013 | 0.29 | Step down 1' & retest | CS302 | 4.5 | 12/27/2013 | ND | NFA | CS302CA | 4.5 | 1/3/2014 | ND | NFA | CS302CB | 4.5 | 1/3/2014 | ND | NFA | | | | | |
| CS303 | 2.5 | 11/15/2013 | 44 | Step down 2' & retest | CS303 | 4.5 | 12/27/2013 | ND | NFA | CS303CA | 4.5 | 1/3/2014 | ND | NFA | CS303CB | 4.5 | 1/3/2014 | ND | NFA | | | | | |
| CS304 | 2.5 | 11/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS305 | 2.5 | 8/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS306 | 2.5 | 8/15/2013 | 0.064 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS307 | 2.5 | 8/14/2013 | 0.41 | Step out 20' in each direction & retest | CS307 | 3.5 | 12/5/2013 | 3.2 | Step down 2' & retest | CS307 | 5.5 | 12/18/2013 | ND | NFA | | | | | | | | | | |
| | | | | | CS307Na | 2.5 | 10/2/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS307Sa | 2.5 | 10/2/2013 | 0.14 | NFA | | | | | | | | | | | | | | | |
| | | | | | CS307Ea | 2.5 | 10/2/2013 | 1.6 | Step out 20' & retest | CS307Eb | 2.5 | 10/8/2013 | 0.21 | NFA | | | | | | | | | | |
| | | | | | CS307Wa | 2.5 | 10/2/2013 | 1.1 | Step out 20' & retest | CS307Wb | 2.5 | 10/8/2013 | 1.8 | Step out 20' & retest | CS307Wc | 2.5 | 10/11/2013 | 5.2 | Step down 1' & retest | CS307Wc | 3.5 | 10/18/2013 | ND | NFA |
| | | | | | CS307Ca | 3.5 | 10/2/2013 | 1.6 | Step down 1' & retest | CS307Cb | 4.5 | 10/8/2013 | ND | NFA | | | | | | | | | | |
| CS307CA | 5.5 | 12/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS307CB | 5.5 | 12/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS308 | 3.5 | 12/5/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS309 | 2.5 | 9/10/2013 | 1.0 | Step down 1' & retest | CS309 | 3.5 | 12/5/2013 | 0.16 | NFA | | | | | | | | | | | | | | | |
| CS310 | 2.5 | 9/10/2013 | 1.2 | Step out 20' in each direction & retest | CS310Na | 2.5 | 10/2/2013 | 5.3 | Step out 20' & retest | CS310Nb | 2.5 | 10/8/2013 | 2.1 | Step out 20' & retest | CS310Nc | 3.5 | 10/11/2013 | 0.24 | Step down 1' & retest | CS310Nc | 4.5 | 10/18/2013 | 2.9 | Step out merged into CS431 area. |
| | | | | | CS310Ea | 2.5 | 10/2/2013 | 3.6 | Step out 20' & retest | CS310Eb | 2.5 | 10/8/2013 | 0.86 | Step out 20' & retest | CS310Ec | 2.5 | 10/11/2013 | 0.36 | Step down 1' & retest | CS310Ec | 3.5 | 10/18/2013 | 0.60 | Step down 1' & retest |
| | | | | | CS310Sa | 2.5 | 10/2/2013 | ND | NFA | | | | | | | | | | | CS310Ed | 4.5 | 11/27/2013 | 0.16 | NFA |
| | | | | | CS310Wa | 2.5 | 10/2/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS310Ca | 3.5 | 10/2/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS311 | 2.5 | 12/26/2013 | 2.7 | Step down 2' & retest | CS311 | 4.5 | 1/3/2014 | ND | NFA | CS311CA | 5.5 | 1/8/2014 | ND | NFA | CS311CB | 5.5 | 1/8/2014 | ND | NFA | | | | | |
| CS312N | 8 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS313E | 8 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS314S | 8 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS315W | 8 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS316C | 10 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS317N | 6 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS318E | 6 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS319S | 6 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS320W | 6 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS321C | 7 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS322 | 4 | 12/23/2013 | 2.4 | Step down 2' & retest | CS322 | 6 | 1/2/2014 | ND | NFA | CS322CA | 7 | 1/8/2014 | ND | NFA | CS322CB | 7 | 1/8/2014 | ND | NFA | | | | | |
| CS323 | 2.5 | 12/26/2013 | 0.086 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS324 | 2.5 | 12/23/2013 | 0.57 | Step down 2' & retest | CS324 | 4.5 | 1/2/2014 | ND | NFA | CS324CA | 5.5 | 1/8/2014 | ND | NFA | CS324CB | 5.5 | 1/8/2014 | ND | NFA | | | | | |
| CS325 | 3.5 | 12/5/2013 | 2.6 | Step down 1' & retest | CS325 | 5.5 | 12/18/2013 | 0.12 | NFA | | | | | | | | | | | | | | | |
| CS325CA | 5.5 | 12/26/2013 | 0.24 | Step down 2' & retest | CS325CA | 7.5 | 1/3/2014 | ND | NFA | | | | | | | | | | | | | | | |
| CS325CB | 5.5 | 12/26/2013 | 0.12 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS326 | 2.5 | 8/14/2013 | 4.2 | Step down 1' & retest | CS326 | 3.5 | 12/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS327 | 2.5 | 9/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS328 | 4 | 8/26/2013 | 1.0 | Step down 1' & retest | CS328 | 5 | 12/6/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS329 | 4 | 8/26/2013 | 9.6 | Step down 1' & retest | CS329 | 5 | 12/6/2013 | 12 | Step down 1' & retest | CS329 | 6 | 12/11/2013 | ND | NFA | CS329 | 7 | 12/11/2013 | ND | NFA | | | | | |
| CS329CA | 6 | 12/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS329CB | 6 | 12/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS330 | 4 | 8/26/2013 | 2.3 | Step down 1' & retest | CS330 | 5 | 12/6/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS331 | 4 | 8/26/2013 | 2.5 | Step down 1' & retest | CS331 | 5 | 12/23/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS332 | 4 | 8/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS333 | 2.5 | 8/26/2013 | 1.4 | Step down 1' & retest | CS333 | 3.5 | 12/26/2013 | 2.1 | Step down 2' & retest | CS333 | 5.5 | 1/3/2014 | ND | NFA | CS333CA | 6.5 | 1/8/2014 | ND | NFA | CS333CB | 6.5 | 1/8/2014 | ND | NFA |
| CS334N | 8 | 8/27/2013 | 0.056 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS335E | 8 | 8/27/2013 | 6.3 | Step out 10' & retest | CS335Ea | 10 | 1/3/2014 | 0.39 | Step out 10' & retest | CS335Eb | 10 | 1/8/2014 | ND | NFA | | | | | | | | | | |
| CS336S | 8 | 8/27/2013 | 2.328 | Step out 10' & retest | CS336Sa | 10 | 1/3/2014 | ND | NFA | | | | | | | | | | | | | | | |
| CS337W | 8 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS338C | 10 | 8/27/2013 | 4.6 | Step down 2' & retest | Removed as part of MW7 excavation. See result for MW7@17. | | | | | | | | | | | | | | | | | | | |
| CS339 | 2.5 | 8/27/2013 | 33 | Step down 2' & retest | CS339 | 5 | 12/26/2013 | 270 | Step down 2' & retest | CS339 | 7 | 1/3/2014 | 43 | Step down 2' & retest | CS339 | 9 | 1/8/2014 | ND | NFA | | | | | |
| CS339CA | 10 | 1/10/2014 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS339CB | 10 | 1/10/2014 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS340 | 2.5 | 8/27/2013 | 19 | Step down 1' & retest | CS340 | 3.5 | 11/20/2013 | 0.66 | Step down 1' & retest | CS340 | 4.5 | 11/20/2013 | 1.1 | Step down 1' & retest | CS340 | 5.5 | 12/3/2013 | ND | NFA | | | | | |
| CS340CA | 4.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS340CB | 4.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS341 | 2.5 | 8/27/2013 | 20 | Step down 1' & retest | CS341 | 3.5 | 12/2/2013 | 0.73 | Step down 1' & retest | CS341 | 4.5 | 12/9/2013 | ND | NFA | | | | | | | | | | |
| CS341CA | 3.5 | 12/2/2013 | 0.48 | Step down 1' & retest | CS341CA | 4.5 | 12/9/2013 | 0.16 | NFA | | | | | | | | | | | | | | | |
| CS341CB | 3.5 | 12/2/2013 | 0.065 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS342 | 2.5 | 8/27/2013 | 22 | Step down 1' & retest | CS342 | 3.5 | 11/20/2013 | 6.0 | Step down 1' & retest | CS342 | 4.5 | 11/20/2013 | 2.6 | Step down 1' & retest | CS342 | 5.5 | 12/3/2013 | ND | NFA | | | | | |
| CS342CA | 5.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS342CB | 5.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS343 | 2.5 | 9/9/2013 | 1.5 | Step down 1' & retest | CS343 | 3.5 | 11/20/2013 | ND | NFA | CS343 | 4.5 | 11/20/2013 | ND | NFA | CS343CA | 3.5 | 12/2/2013 | ND | NFA | CS343CB | 3.5 | 12/2/2013 | ND | NFA |
| CS344 | 2.5 | 8/27/2013 | 10 | Step down 1' & retest | CS344 | 3.5 | 11/20/2013 | 4.0 | Step down 1' & retest | CS344 | 4.5 | 11/20/2013 | 0.10 | NFA | | | | | | | | | | |
| CS344CA | 4.5 | 12/2/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS344CB | 4.5 | 12/2/2013 | 4.0 | Step down 1' & retest | CS344CB | 5.5 | 12/9/2013 | 3.1 | Step down 1' & retest | CS344CB | 7.5 | 12/13/2013 | ND | NFA | | | | | | | | | | |
| CS345 | 2.5 | 8/27/2013 | 11 | Step down 1' & retest | CS345 | 3.5 | 11/20/2013 | ND | NFA | CS345 | 4.5 | 11/20/2013 | 0.11 | NFA | | | | | | | | | | |
| CS345CA | 3.5 | 12/2/2013 | 0.11 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS345CB | 3.5 | 12/2/2013 | 0.49 | Step down 1' & retest | CS345CB | 4.5 | 12/9/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS346 | 2.5 | 8/27/2013 | 16 | Step down 1' & retest | CS346 | 3.5 | 11/20/2013 | 3.8 | Step down 1' & retest | CS346 | 4.5 | 11/20/2013 | 1.1 | Step down 1' & retest | CS346 | 5.5 | 12/3/2013 | 0.082 | NFA | | | | | |

## Table 1
## PCB Confirmation Sample Results
## Former Agricultural Park, Riverside, California

| Phase 2 Confirmation Samples | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action |
| CS346CA | 5.5 | 12/11/2013 | 0.38 | Step down 1' & retest | CS346CA | 7.5 | 12/18/2013 | 2.3 | Step down 2' & retest | CS346CA | 9.5 | 12/26/2013 | ND | NFA | | | | | | | | | | |
| CS346CB | 5.5 | 12/11/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS347 | 2.5 | 8/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS348N | 2.5 | 9/9/2013 | 6.8 | Step out 10' & retest | CS348Na | 3.5 | 12/3/2013 | 1.5 | Step out 10' & retest | CS348Nb | 3.5 | 12/13/2013 | ND | NFA | | | | | | | | | | |
| CS349E | 2.5 | 9/9/2013 | 59 | Step out 10' & retest | CS349Ea | 3.5 | 12/3/2013 | 0.063 | NFA | | | | | | | | | | | | | | | |
| CS350S | 2.5 | 9/9/2013 | 13 | Step out 10' & retest | CS350Sa | 3.5 | 12/3/2013 | 3.7 | Step out 10' & retest | CS350Sb | 3.5 | 12/13/2013 | 1.1 | Step out 10' & retest | CS350Sc | 3.5 | 12/18/2013 | 2.3 | Step out 10' & retest | CS350Sd | 3.5 | 12/26/2013 | 0.070 | NFA |
| CS351W | 2.5 | 9/9/2013 | 4.4 | Step out 10' & retest | CS351Wa | 3.5 | 12/3/2013 | 0.57 | Step out 10' & retest | CS351Wb | 3.5 | 12/13/2013 | ND | NFA | | | | | | | | | | |
| CS352C | 2.5 | 9/9/2013 | 17 | Step down 2' & retest | CS352 | 3.5 | 11/20/2013 | 7.7 | Step down 1' & retest | CS352 | 4.5 | 11/20/2013 | ND | NFA | | | | | | | | | | |
| CS352CA | 4.5 | 12/3/2013 | 0.22 | Step down 1' & retest | CS352CA | 6.5 | 12/13/2013 | ND | NFA | CS352CA | 8.5 | 12/18/2013 | ND | NFA | | | | | | | | | | |
| CS352CB | 4.5 | 12/3/2013 | 0.70 | Step down 1' & retest | CS352CB | 6.5 | 12/13/2013 | 0.48 | Step down 1' & retest | CS352CB | 8.5 | 12/18/2013 | ND | NFA | | | | | | | | | | |
| CS353 | 2.5 | 8/27/2013 | 68 | Step down 1' & retest | CS353 | 3.5 | 11/20/2013 | 6.1 | Step down 1' & retest | CS353 | 4.5 | 11/20/2013 | ND | NFA | | | | | | | | | | |
| CS353CA | 4.5 | 12/2/2013 | 0.70 | Step down 1' & retest | CS353CA | 5.5 | 12/9/2013 | 0.24 | Step down 1' & retest | CS353CA | 7.5 | 12/13/2013 | ND | NFA | | | | | | | | | | |
| CS353CB | 4.5 | 12/2/2013 | 0.072 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS354 | 2.5 | 9/9/2013 | 15 | Step down 1' & retest | CS354 | 3.5 | 11/20/2013 | ND | NFA | CS354 | 4.5 | 11/20/2013 | 0.10 | NFA | CS354CA | 3.5 | 12/2/2013 | ND | NFA | CS354CB | 3.5 | 12/2/2013 | ND | NFA |
| CS355 | 2.5 | 9/9/2013 | 0.053 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS356 | 2.5 | 9/9/2013 | 11 | Step down 2' & retest | CS356 | 4.5 | 12/26/2013 | 0.5 | Step down 2' & retest | CS356 | 6.5 | 1/3/2014 | ND | NFA | CS356CA | 7.5 | 1/8/2014 | ND | NFA | CS356CB | 7.5 | 1/8/2014 | ND | NFA |
| CS357 | 2.5 | 10/15/2013 | 16 | Step down 2' & retest | CS357 | 4.5 | 10/18/2013 | 0.062 | NFA | CS357CA | 4.5 | 11/22/2013 | ND | NFA | CS357CB | 4.5 | 11/22/2013 | ND | NFA | | | | | |
| CS358 | 2.5 | 10/15/2013 | 2.7 | Step down 1' & retest | CS358 | 3.5 | 10/18/2013 | 2.2 | Step down 1' & retest | CS358 | 4.5 | 11/22/2013 | ND | NFA | | | | | | | | | | |
| CS358CA | 4.5 | 12/4/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS358CB | 4.5 | 12/4/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS359 | 2.5 | 9/10/2013 | 30 | Step down 1' & retest | CS359 | 3.5 | 11/4/2013 | 4.6 | Step down 4' & retest | CS359 | 7.5 | 1/29/2014 | ND | NFA | CS359CA | 7.5 | 1/29/2014 | ND | NFA | CS359CB | 7.5 | 1/29/2014 | ND | NFA |
| CS360 | 2.5 | 9/10/2013 | 29 | Step down 1' & retest | CS360 | 3.5 | 11/4/2013 | 0.42 | Step down 1' & retest | CS360 | 4.5 | 11/8/2013 | 0.85 | Step down 1' & retest | CS360 | 5.5 | 11/14/2013 | 0.17 | Step down 1' & retest | CS360 | 6.5 | 11/20/2013 | 0.11 | NFA |
| CS361 | 2.5 | 9/10/2013 | 15 | Step down 2' & retest | CS361 | 4.5 | 12/26/2013 | 3.6 | Step down 2' & retest | CS361 | 6.5 | 1/3/2014 | 0.081 | NFA | | | | | | CS360CA | 6.5 | 12/2/2013 | ND | NFA |
| CS361CA | 7.5 | 1/8/2014 | ND | NFA | | | | | | | | | | | | | | | | CS360CB | 6.5 | 12/2/2013 | 0.053 | NFA |
| CS361CB | 7.5 | 1/8/2014 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS362 | 2.5 | 9/10/2013 | 1.5 | Step down 2' & retest | CS362 | 4.5 | 12/26/2013 | 0.13 | NFA | CS362CA | 4.5 | 1/3/2014 | ND | NFA | CS362CB | 4.5 | 1/3/2014 | ND | NFA | | | | | |
| CS363 | 2.5 | 8/9/2013 | 1.4 | Step out 20' in each direction & retest | CS363Na | 2.5 | 8/22/2013 | 2.5 | Step down 1' & retest | CS363 | 3.5 | 11/4/2013 | 1.1 | Step down 2' & retest | CS363 | 5.5 | 11/8/2013 | ND | NFA | CS363CA | 5.5 | 11/22/2013 | ND | NFA |
| | | | | | CS363Sa | 2.5 | 8/22/2013 | 2.2 | Step out 20' in each direction & retest | Material removed as part of 3.5' cut in this area. See result for CS363CA and CS36CB. | | | | | | | | | | CS363CB | 5.5 | 11/22/2013 | ND | NFA |
| | | | | | CS363Ea | 2.5 | 8/22/2013 | 4.6 | Step out 20' in each direction & retest | Material removed as part of 3.5' cut in this area. See result for CS363CA and CS36CB. | | | | | | | | | | | | | | |
| | | | | | CS363Wa | 2.5 | 8/22/2013 | 7.3 | Step out 20' in each direction & retest | Material removed as part of 3.5' cut in this area. See result for CS363CA and CS36CB. | | | | | | | | | | | | | | |
| CS364 | 2.5 | 10/15/2013 | 0.48 | Step down 1' & retest | CS364 | 3.5 | 10/18/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS364CA | 3.5 | 11/20/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS364CB | 3.5 | 11/20/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS365N | 4 | 10/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS366E | 4 | 10/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS367S | 4 | 10/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS368W | 4 | 10/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS369C | 8 | 10/15/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS370 | 4 | 10/15/2013 | 0.071 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS371 | 4 | 9/9/2013 | 0.051 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS372N | 4 | 9/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS373E | 4 | 9/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS374S | 4 | 9/9/2013 | 0.074 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS375W | 4 | 9/9/2013 | 0.062 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS376C | 7 | 9/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS377 | 2.5 | 9/9/2013 | 6.1 | Step down 1' & retest | CS377 | 3.5 | 11/20/2013 | ND | NFA | CS377 | 4.5 | 11/20/2013 | ND | NFA | CS377CA | 3.5 | 12/2/2013 | ND | NFA | CS377CB | 3.5 | 12/2/2013 | ND | NFA |
| CS378 | 3.5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS379 | 5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS380 | 4 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS381 | 3.5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS382 | 7 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS383 | 2.5 | 9/9/2013 | 4.8 | Step down 2' & retest | CS383 | 4.5 | 12/26/2013 | ND | NFA | CS383CA | 4.5 | 1/3/2014 | ND | NFA | CS383CB | 4.5 | 1/3/2014 | ND | NFA | | | | | |
| CS384N | 6.5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS385E | 6.5 | 9/12/2013 | 0.060 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS386S | 6.5 | 9/12/2013 | 0.13 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS387W | 6.5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS388C | 8 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS389 | 4 | 9/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS390 | 2.5 | 10/15/2013 | 8.5 | Step down 2' & retest | CS390 | 4.5 | 10/18/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS390CA | 4.5 | 11/20/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS390CB | 4.5 | 11/20/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS391 | 4 | 9/9/2013 | 0.45 | Step down 1' & retest | CS391 | 5 | 11/20/2013 | 0.29 | Step down 1' & retest | CS391 | 6 | 11/20/2013 | ND | NFA | CS391CA | 6 | 12/2/2013 | ND | NFA | CS391CB | 6 | 12/2/2013 | ND | NFA |
| CS392 | 7 | 9/9/2013 | 1.3 | Step down 2' & retest | CS392 | 9 | 12/26/2013 | ND | NFA | CS392CA | 9 | 1/3/2014 | ND | NFA | CS392CB | 9 | 1/3/2014 | 0.13 | NFA | | | | | |
| CS393 | 4 | 9/9/2013 | 0.22 | Step down 1' & retest | CS393 | 3.5 | 11/4/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS394 | 2.5 | 8/9/2013 | 0.47 | Step out 20' in each direction & retest | CS394Na | 2.5 | 8/22/2013 | 1.3 | Step out 20' in each direction & retest | CS394Nb | 2.5 | 8/30/2013 | 0.34 | Step out 20' in each direction & retest | CS394 | 3.5 | 11/4/2013 | 0.83 | Step down 2' & retest | CS394 | 4.5 | 11/8/2013 | 0.78 | Step down 1' & retest |
| | | | | | CS394Sa | 2.5 | 8/22/2013 | 16 | Step out 20' in each direction & retest | CS394Sb | 2.5 | 8/30/2013 | 3.1 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS394. | | | | | CS394 | 5.5 | 11/14/2013 | 600 | Step down 2' & retest |
| | | | | | CS394Ea | 2.5 | 8/22/2013 | 5.3 | Step out 20' in each direction & retest | CS394Eb | 2.5 | 8/30/2013 | 1.7 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS394. | | | | | CS394 | 7.5 | 11/20/2013 | ND | NFA |
| | | | | | CS394Wa | 2.5 | 8/22/2013 | 5.7 | Step out 20' in each direction & retest | CS394Wb | 2.5 | 8/30/2013 | 21 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS394. | | | | | | | | | |
| | | | | | | | | | | CS394NE | 2.5 | 8/30/2013 | 10 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS394. | | | | | | | | | |
| | | | | | | | | | | CS394NW | 2.5 | 8/30/2013 | 2.1 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS394. | | | | | | | | | |
| | | | | | | | | | | CS394SE | 2.5 | 8/30/2013 | 0.33 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS394. | | | | | | | | | |
| | | | | | | | | | | CS394SW | 2.5 | 8/30/2013 | 16 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS394. | | | | | | | | | |
| CS394CA | 7.5 | 12/2/2013 | 1.0 | Step down 1' & retest | CS394CA | 8.5 | 12/9/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS394CB | 7.5 | 12/2/2013 | 16 | Step down 2' & retest | CS394CB | 8.5 | 12/9/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS395 | 2.5 | 8/9/2013 | 0.15 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS396 | 2.5 | 8/9/2013 | 0.91 | Step out 20' in each direction & retest | CS396Na | 2.5 | 8/22/2013 | 2.0 | Step out 20' in each direction & retest | CS396Nb | 2.5 | 8/30/2013 | 2.4 | Step out 20' in each direction & retest | CS396 | 3.5 | 11/4/2013 | 3.3 | Step down 2' & retest | CS396 | 5.5 | 11/8/2013 | ND | NFA |
| | | | | | CS396Sa | 2.5 | 8/22/2013 | 0.47 | Step out 20' in each direction & retest | CS396Sb | 2.5 | 8/30/2013 | 0.27 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS396. | | | | | CS396CA | 5.5 | 11/22/2013 | ND | NFA |
| | | | | | CS396Ea | 2.5 | 8/22/2013 | 0.16 | NFA | | | | | | | | | | | CS396CB | 5.5 | 11/22/2013 | ND | NFA |
| | | | | | CS396Wa | 2.5 | 8/22/2013 | 1.2 | Step out 20' in each direction & retest | CS396Wb | 2.5 | 8/30/2013 | 2.8 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS396. | | | | | | | | | |
| | | | | | | | | | | CS396NW | 2.5 | 8/30/2013 | 0.25 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS396. | | | | | | | | | |
| | | | | | | | | | | CS396NE | 2.5 | 8/30/2013 | 0.20 | NFA | | | | | | | | | | |
| | | | | | | | | | | CS396SW | 2.5 | 8/30/2013 | 0.66 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS396. | | | | | | | | | |
| | | | | | | | | | | CS396SE | 2.5 | 8/30/2013 | ND | NFA | | | | | | | | | | |
| CS397 | 2.5 | 8/9/2013 | 58 | Step out 20' in each direction & retest | CS397Na | 2.5 | 8/22/2013 | 3.6 | Step out 20' in each direction & retest | CS397Nb | 2.5 | 8/30/2013 | 4.2 | Step out 20' in each direction & retest | CS397 | 3.5 | 11/7/2013 | 1.7 | Step down 2' & retest | CS397 | 4.5 | 11/22/2013 | ND | NFA |
| | | | | | CS397Sa | 2.5 | 8/22/2013 | 6.1 | Step out 20' in each direction & retest | CS397Sb | 2.5 | 8/30/2013 | 3.2 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS397. | | | | | CS397CA | 4.5 | 12/4/2013 | ND | NFA |
| | | | | | CS397Ea | 2.5 | 8/22/2013 | 7.3 | Step out 20' in each direction & retest | CS397Eb | 2.5 | 8/30/2013 | 9.0 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS397. | | | | | CS397CB | 4.5 | 12/4/2013 | ND | NFA |
| | | | | | CS397Wa | 2.5 | 8/22/2013 | 3.8 | Step out 20' in each direction & retest | CS397Wb | 2.5 | 8/30/2013 | 0.12 | NFA | | | | | | | | | | |
| | | | | | | | | | | CS397NW | 2.5 | 8/30/2013 | 1.9 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS397. | | | | | | | | | |
| | | | | | | | | | | CS397NE | 2.5 | 8/30/2013 | 1.2 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS397. | | | | | | | | | |
| | | | | | | | | | | CS397SE | 2.5 | 8/30/2013 | 6.7 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS397. | | | | | | | | | |
| | | | | | | | | | | CS397SW | 2.5 | 8/30/2013 | 13 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS397. | | | | | | | | | |
| CS398 | 2.5 | 8/9/2013 | 14 | Step out 20' in each direction & retest | CS398Na | 2.5 | 8/22/2013 | 1.9 | Step out 20' in each direction & retest | CS398Nb | 2.5 | 8/30/2013 | 2.0 | Step out 20' in each direction & retest | CS398 | 3.5 | 11/4/2013 | 4.1 | Step down 2' & retest | CS398 | 5.5 | 11/8/2013 | 2.0 | Step down 2' & retest |

**Table 1**
**PCB Confirmation Sample Results**
**Former Agricultural Park, Riverside, California**

| Phase 2 Confirmation Samples | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action |
| | | | | | CS398Sa | 2.5 | 8/22/2013 | 5.3 | Step out 20' in each direction & retest | CS398Sb | 2.5 | 8/30/2013 | 38 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS398. | | | | | CS398 | 6.5 | 11/14/2013 | 0.34 | Step down 1' & retest |
| | | | | | CS398Ea | 2.5 | 8/22/2013 | 3.4 | Step out 20' in each direction & retest | CS398Eb | 2.5 | 8/30/2013 | 0.50 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS398. | | | | | CS398 | 7.5 | 11/20/2013 | 3.4 | Step down 1' & retest |
| | | | | | CS398Wa | 2.5 | 8/22/2013 | 9.7 | Step out 20' in each direction & retest | CS398Wb | 2.5 | 8/30/2013 | 4.0 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS398. | | | | | | | | | |
| | | | | | | | | | | CS398NW | 2.5 | 8/30/2013 | 2.4 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS398. | | | | | | | | | |
| | | | | | | | | | | CS398NE | 2.5 | 8/30/2013 | 1.8 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS398. | | | | | | | | | |
| | | | | | | | | | | CS398SW | 2.5 | 8/30/2013 | 8.0 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS398. | | | | | | | | | |
| | | | | | | | | | | CS398SE | 2.5 | 8/30/2013 | 3.8 | Step out 20' in each direction & retest | Removed an additional 1 ft. of soil from this area and retested. See CS398. | | | | | | | | | |
| CS398CA | 8.5 | 12/2/2013 | 1.1 | Step down 1' & retest | CS398CA | 9.5 | 12/9/2013 | 0.16 | NFA | | | | | | | | | | | | | | | |
| CS398CB | 8.5 | 12/2/2013 | 21 | Step down 2' & retest | CS398CB | 9.5 | 12/9/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS398BNa | 2.5 | 8/26/2013 | ND | NFA | | | | | | | | | | | | | | | |
| | | | | | CS398BSa | 2.5 | 8/26/2013 | 3.1 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | |
| | | | | | CS398BEa | 2.5 | 8/26/2013 | 300 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | |
| | | | | | CS398BWa | 2.5 | 8/26/2013 | 19 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | |
| CS398BNb | 2.5 | 9/5/2013 | 1.8 | Step out 20' in each direction & retest | CS398B | 3.5 | 11/4/2013 | 4.4 | Step down 2' & retest | CS398B | 5.5 | 11/8/2013 | 0.58 | Step down 1' & retest | CS398B | 6.5 | 11/14/2013 | 37 | Step down 2' & retest | CS398B | 8.5 | 11/20/2013 | 0.053 | NFA |
| CS398BSb | 2.5 | 9/5/2013 | 4.4 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | | CS398BCA | 8.5 | 12/26/2013 | 0.072 | NFA |
| CS398BEb | 2.5 | 9/5/2013 | 1.3 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | | CS398BCB | 8.5 | 12/26/2013 | 0.68 | Step down 2' & retest |
| CS398BWb | 2.5 | 9/5/2013 | 22 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | | CS398BCB | 10.5 | 1/3/2014 | ND | NFA |
| CS398BSW | 2.5 | 9/5/2013 | 5.6 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | | | | | | |
| CS398BSE | 2.5 | 9/5/2013 | 2.4 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | | | | | | |
| CS398BNE | 2.5 | 9/5/2013 | 1.1 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | | | | | | |
| CS398BNW | 2.5 | 9/5/2013 | 2.6 | Step out 20' in each direction & retest | | | | | | | | | | | | | | | | | | | | |
| CS399 | 2.5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS400N | 5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS401E | 8 | 9/12/2013 | 7.1 | Step out 10' & retest | CS401E | 9 | 11/4/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS402S | 6 | 9/12/2013 | 0.74 | Step out 10' & retest | CS402S | 7 | 11/4/2013 | 0.11 | NFA | | | | | | | | | | | | | | | |
| CS403W | 5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS404C | 5 | 9/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS405 | 2.5 | 9/9/2013 | 26 | Step down 1' & retest | CS405 | 3.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS406 | 4 | 9/9/2013 | 0.058 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS407 | 4 | 9/9/2013 | 0.54 | Step down 1' & retest | CS407 | 3.5 | 11/7/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS408 | 22 | 9/9/2013 | 4.5 | Step down 1' & retest | CS408 | 23 | 11/27/2013 | 3.2 | Step down 1' & retest | CS408 | 24 | 12/6/2013 | 8.9 | Step down 2' & retest | CS408 | 26 | 12/12/2013 | ND | NFA | | | | | |
| CS408CA | 26 | 12/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS408CB | 26 | 12/18/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS409 | 21 | 9/9/2013 | 55 | Step down 1' & retest | CS409 | 22 | 11/27/2013 | 3.9 | Step down 1' & retest | CS409 | 23 | 12/6/2013 | 8.7 | Step down 2' & retest | CS409 | 25 | 12/12/2013 | 1.7 | Step down 2' & retest | CS409 | 27 | 12/18/2013 | 0.35 | Step down 2' & retest |
| CS410 | 21 | 9/9/2013 | 180 | Step down 1' & retest | CS410 | 22 | 11/27/2013 | 740 | Step down 2' & retest | CS410 | 23 | 12/6/2013 | 1.1 | Step down 2' & retest | CS410 | 25 | 12/12/2013 | 3.2 | Step down 2' & retest | CS409 | 28 | 12/27/2013 | ND | NFA |
| CS410CA | 25 | 12/18/2013 | 2.9 | Step down 2' & retest | CS410CA | 28 | 12/30/2013 | 0.31 | Step down 2' & retest | Unable to excavate deeper. Bedrock encountered. | | | | | | | | | | | | | | |
| CS410CB | 25 | 12/18/2013 | 0.64 | Step down 2' & retest | CS410CB | 28 | 12/27/2013 | 0.098 | NFA | | | | | | | | | | | | | | | |
| CS411 | 6 | 9/12/2013 | 1.8 | Step down 1' & retest | CS411 | 3.5 | 11/7/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS412 | 4 | 9/9/2013 | 0.89 | Step down 2' & retest | CS412 | 6 | 12/26/2013 | ND | NFA | CS412CA | 6 | 1/3/2014 | 0.057 | NFA | CS412CB | 6 | 1/3/2014 | ND | NFA | | | | | |
| CS413 | 4 | 8/14/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS414 | 2.5 | 9/9/2013 | 3.8 | Step down 1' & retest | CS414 | 3.5 | 11/4/2013 | 0.14 | NFA | | | | | | | | | | | | | | | |
| CS415 | 2.5 | 9/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS416 | 2.5 | 9/9/2013 | 9.8 | Step down 1' & retest | CS416 | 3.5 | 11/4/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS417 | 2.5 | 8/15/2013 | 33 | Step down 1' & retest | CS417 | 3.5 | 11/4/2013 | 8.5 | Step down 2' & retest | CS417 | 5.5 | 11/8/2013 | ND | NFA | | | | | | | | | | |
| CS417CA | 5.5 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS417CB | 5.5 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS418 | 2.5 | 9/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS419 | 7 | 9/9/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS420 | 2.5 | 9/9/2013 | 0.068 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS421 | 2.5 | 9/9/2013 | 7.8 | Step down 2' & retest | CS421 | 4.5 | 12/27/2013 | ND | NFA | CS421CA | 5.5 | 1/9/2014 | ND | NFA | CS421CB | 5.5 | 1/9/2014 | 0.096 | NFA | | | | | |
| CS422 | 2.5 | 9/9/2013 | 5.9 | Step down 1' & retest | CS422 | 3.5 | 11/20/2013 | 0.11 | NFA | CS422 | 4.5 | 11/20/2013 | 0.11 | NFA | | | | | | | | | | |
| CS422CA | 3.5 | 12/3/2013 | 1.1 | Step down 1' & retest | CS422CA | 4.5 | 12/12/2013 | 0.44 | Step down 1' & retest | CS422CA | 6.5 | 12/13/2013 | 0.092 | NFA | | | | | | | | | | |
| CS422CB | 3.5 | 12/3/2013 | 1.4 | Step down 1' & retest | CS422CB | 4.5 | 12/12/2013 | 0.59 | Step down 1' & retest | CS422CB | 6.5 | 12/13/2013 | 6.8 | Step down 2' & retest | CS422CB | 8.5 | 12/18/2013 | ND | NFA | | | | | |
| CS423 | 2.5 | 8/27/2013 | 2.4 | Step down 2' & retest | CS423 | 4.5 | 12/26/2013 | ND | NFA | CS423CA | 4.5 | 1/3/2014 | ND | NFA | CS423CB | 4.5 | 1/3/2014 | ND | NFA | | | | | |
| CS424 | 2.5 | 8/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS425 | 2.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS426 | 5.5 | 12/23/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS427 | 2.5 | 12/23/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| CS428 | 5.5 | 12/23/2013 | 0.81 | Step down 2' & retest | CS428 | 7.5 | 1/2/2014 | ND | NFA | CS428CA | 8.5 | 1/8/2014 | ND | NFA | CS428CB | 8.5 | 1/8/2014 | ND | NFA | | | | | |
| CS429 | 2.5 | 8/26/2013 | 1.6 | Step down 2' & retest | CS429 | 4.5 | 1/3/2014 | ND | NFA | CS429CA | 5.5 | 1/8/2014 | ND | NFA | CS429CB | 5.5 | 1/8/2014 | ND | NFA | | | | | |
| CS430 | 2.5 | 8/26/2013 | 35.171 | Step down 1' & retest | CS430 | 3.5 | 12/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS431N | 3 | 10/15/2013 | 2.2 | Step out 10' & retest | CS431Na | 3 | 10/18/2013 | 1.4 | Step out 10' & retest | CS431Nb | 4 | 11/26/2013 | 0.74 | Step out 10' & retest | CS431Nc | 4 | 12/5/2013 | ND | NFA | | | | | |
| CS432E | 3 | 10/15/2013 | 4.8 | Step out 10' & retest | CS432Ea | 3 | 10/18/2013 | 0.74 | Step out 10' & retest | CS432Eb | 4 | 11/26/2013 | ND | NFA | | | | | | | | | | |
| CS433S | 3 | 10/15/2013 | 0.76 | Step out 10' & retest | CS433Sa | 3 | 10/18/2013 | 1.3 | Step out 10' & retest | CS433Sb | 4 | 11/26/2013 | ND | NFA | | | | | | | | | | |
| CS434W | 3 | 10/15/2013 | 0.48 | Step out 10' & retest | CS434Wa | 3 | 10/18/2013 | 2.9 | Step out 10' & retest | CS434Wb | 4 | 11/26/2013 | ND | NFA | | | | | | | | | | |
| CS435C | 5 | 10/15/2013 | 12 | Step down 2' & retest | CS435Ca | 7 | 10/18/2013 | 0.79 | Step down 1' & retest | CS435C | 8 | 11/8/2013 | ND | NFA | CS435C | 9 | 11/8/2013 | ND | NFA | | | | | |
| CS436N | 3 | 8/15/2013 | 42 | Step out 10' & retest | CS436Na | 4 | 8/28/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS437E | 3 | 8/15/2013 | 7.8 | Step out 10' & retest | CS437Ea | 4 | 8/28/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS438S | 3 | 8/15/2013 | 0.71 | Step out 10' & retest | CS438Sa | 4 | 8/28/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS439W | 3 | 8/15/2013 | 1.3 | Step out 10' & retest | CS439Wa | 4 | 8/28/2013 | ND | NFA | | | | | | | | | | | | | | | |
| CS440C | 4 | 8/15/2013 | 11 | Step down 1' & retest | CS440Ca | 5 | 8/28/2013 | 0.053 | NFA | | | | | | | | | | | | | | | |
| CS441N | 3 | 8/15/2013 | 0.45 | Step out 10' & retest | CS441Na | 4 | 8/28/2013 | 2.6 | Step out 10' & retest | CS441Nb | 4 | 1/13/2014 | 0.12 | NFA | | | | | | | | | | |
| CS442E | 3 | 8/15/2013 | 2.2 | Step out 10' & retest | CS442Ea | 4 | 8/28/2013 | 6.3 | Step out 10' & retest | Step out merges with excavation for CS398B. | | | | | | | | | | | | | | |
| CS443S | 3 | 8/15/2013 | 2.2 | Step out 10' & retest | CS443Sa | 4 | 8/28/2013 | 0.10 | NFA | | | | | | | | | | | | | | | |
| CS444W | 3 | 8/15/2013 | 0.094 | NFA | | | | | | | | | | | | | | | | | | | | |
| CS445C | 4 | 8/15/2013 | 2.6 | Step down 1' & retest | CS445Ca | 5 | 8/28/2013 | 1.3 | Step down 2' & retest | CS445Cb | 7 | 1/13/2014 | 0.17 | NFA | | | | | | | | | | |
| **Other Samples** | | | | | | | | | | | | | | | | | | | | | | | | |
| 121 | 4 | 8/26/2013 | 5.5 | Step down 2' & retest | 121a | 6 | 9/5/2013 | 0.061 | NFA | | | | | | | | | | | | | | | |
| 132 | 4 | 8/26/2013 | 8.2 | Step down 2' & retest | 132 | 6 | 12/30/2013 | 13 | Step down 2' & retest | 132 | 8 | 1/3/2014 | ND | NFA | 132CA | 8 | 1/8/2014 | ND | NFA | 132CB | 8 | 1/8/2014 | ND | NFA |
| RD5SWE | 4 | 8/26/2013 | 33 | Step down 1' & retest | RD5SWE | 6 | 12/26/2013 | ND | NFA | RD5SWE CA | 6 | 1/3/2014 | ND | NFA | RD5SWE CB | 6 | 1/3/2014 | ND | NFA | | | | | |
| B-57N | 4 | 8/26/2013 | 3.5 | Step out 10' & retest | B-57Na | 5 | 9/5/2013 | 0.094 | NFA | | | | | | | | | | | | | | | |
| B-57E | 4 | 8/26/2013 | 3.6 | Step out 10' & retest | B-57Ea | 5 | 9/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| B-57S | 4 | 8/26/2013 | 0.18 | NFA | | | | | | | | | | | | | | | | | | | | |
| B-57W | 4 | 8/26/2013 | 5.4 | Step out 10' & retest | B-57Wa | 5 | 9/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| B-57B | 4 | 8/26/2013 | 0.20 | NFA | | | | | | | | | | | | | | | | | | | | |
| B-68N | 4 | 8/26/2013 | 1.1 | Step out 10' & retest | B-68Na | 5 | 9/5/2013 | 0.61 | Step out 10' & retest | B-68Nb | 5 | 12/26/2013 | ND | NFA | | | | | | | | | | |
| B-68W | 4 | 8/26/2013 | 3.5 | Step out 10' & retest | B-68Wa | 5 | 9/5/2013 | 0.072 | NFA | | | | | | | | | | | | | | | |
| B-68S | 4 | 8/26/2013 | 1.5 | Step out 10' & retest | B-68Sa | 5 | 9/5/2013 | ND | NFA | | | | | | | | | | | | | | | |

**Table 1**
**PCB Confirmation Sample Results**
**Former Agricultural Park, Riverside, California**

| Phase 2 Confirmation Samples | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action |
| B-68E | 4 | 8/26/2013 | 17 | Step out 10' & retest | B-68Ea | 5 | 9/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| B-68B | 4 | 8/26/2013 | 9.3 | Step down 2' & retest | B-68Ba | 6 | 9/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| MW7 | 17 | 12/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| MW8 | 17 | 12/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| **Sewer Line** | | | | | | | | | | | | | | | | | | | | | | | | |
| P6 | 7 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P6W | 3.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P6E | 3.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P7 | 5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P7W | 2.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P7E | 2.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P8 | 5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P8W | 2.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P8E | 2.5 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P9 | 4 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P9W | 2 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| P9E | 2 | 12/17/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| **Brine Basin Perimeter** | | | | | | | | | | | | | | | | | | | | | | | | |
| BB-PER1 | 3 | 9/20/2013 | ND | NFA | BB-PER1 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER2 | 3 | 9/20/2013 | ND | NFA | BB-PER2 | 5 | 9/20/2013 | 0.15 | NFA | | | | | | | | | | | | | | | |
| BB-PER3 | 3 | 9/20/2013 | ND | NFA | BB-PER3 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER4 | 3 | 9/20/2013 | 8.1 | Step down 2' & retest | BB-PER4 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER5 | 3 | 9/20/2013 | ND | NFA | BB-PER5 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER6 | 3 | 9/20/2013 | 0.059 | NFA | BB-PER6 | 5 | 9/20/2013 | 0.089 | NFA | | | | | | | | | | | | | | | |
| BB-PER7 | 3 | 9/20/2013 | ND | NFA | BB-PER7 | 5 | 9/20/2013 | 0.099 | NFA | | | | | | | | | | | | | | | |
| BB-PER8 | 3 | 9/20/2013 | 0.068 | NFA | BB-PER8 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER9 | 3 | 9/20/2013 | ND | NFA | BB-PER9 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER10 | 3 | 9/20/2013 | 0.084 | NFA | BB-PER10 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER11 | 3 | 9/20/2013 | 4.4 | Step down 2' & retest | BB-PER11 | 5 | 9/20/2013 | 92 | Step down 2' & retest | BB-PER11 | 7 | 9/26/2013 | 0.062 | NFA | BB-PER11 | 9 | 9/26/2013 | ND | NFA | | | | | |
| BB-PER12 | 3 | 9/20/2013 | 0.10 | NFA | BB-PER12 | 5 | 9/20/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER13 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER14 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER15 | 5.5 | 10/30/2013 | 0.064 | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER16 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER17 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER18 | 5.5 | 10/30/2013 | 0.52 | Sample sidewall 1' deeper | BB-PER18 | 6.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER18Sa | 4 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER18Wa | 4 | 11/26/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER18Na | 3 | 11/26/2013 | 1.5 | Step out 10' & retest | Step out merged into CS19 | | | | | | | | | | | | | | | | | | | |
| BB-PER19 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER20 | 5.5 | 10/30/2013 | 0.54 | Sample sidewall 1' deeper | BB-PER20 | 6.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER20Na | 4 | 11/27/2013 | 0.19 | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER20Ea | 2.5 | 11/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER20Wa | 2.5 | 11/27/2013 | 0.35 | Step out 10' & retest | BB-PER20Wb | 2.5 | 12/6/2013 | 0.086 | NFA | | | | | | | | | | | | | | | |
| BB-PER21 | 5.5 | 10/30/2013 | 0.39 | Sample sidewall 1' deeper | BB-PER21 | 6.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER21Na | 4 | 11/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER21Ea | 2.5 | 11/27/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER21Wa | 2.5 | 11/27/2013 | 0.19 | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER22 | 5.5 | 10/30/2013 | 0.059 | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER23 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER24 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER25 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER26 | 5.5 | 10/30/2013 | 0.61 | Sample sidewall 1' deeper | BB-PER26 | 6.5 | 11/5/2013 | ND | NFA | | | | | | | | | | | | | | | |
| BB-PER26Na | 4 | 11/27/2013 | 0.069 | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER26Ea | 4 | 11/27/2013 | 0.11 | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER26Sa | 4 | 11/27/2013 | 0.11 | NFA | | | | | | | | | | | | | | | | | | | | |
| BB-PER27 | 5.5 | 10/30/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| **Plateau Area Perimeter** | | | | | | | | | | | | | | | | | | | | | | | | |
| PLPER-E1 | 3.5 | 9/24/2013 | 10 | Step down 1' & retest | PLPER-E1 | 4.5 | 9/24/2013 | 1.7 | Step down 1' & retest | PLPER-E1@5.5 | 5.5 | 10/1/2013 | ND | NFA | | | | | | | | | | |
| PLPER-E2 | 3.5 | 9/24/2013 | 200 | Step down 1' & retest | PLPER-E2 | 4.5 | 9/24/2013 | 0.33 | Step down 1' & retest | PLPER-E2@5.5 | 5.5 | 10/1/2013 | 0.11 | NFA | | | | | | | | | | |
| PLPER-E3 | 3.5 | 9/24/2013 | ND | NFA | PLPER-E3 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-E4 | 3.5 | 9/24/2013 | 0.53 | Step down 1' & retest | PLPER-E4 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-S1 | 3.5 | 9/24/2013 | ND | NFA | PLPER-S1 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-S2 | 3.5 | 9/24/2013 | ND | NFA | PLPER-S2 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-S3 | 3.5 | 9/24/2013 | 0.93 | Step down 1' & retest | PLPER-S3 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-S4 | 3.5 | 9/24/2013 | ND | NFA | PLPER-S4 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-W1 | 3.5 | 9/24/2013 | 0.15 | NFA | PLPER-W1 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-W2 | 3.5 | 9/24/2013 | 9.6 | Step down 1' & retest | PLPER-W2 | 4.5 | 9/24/2013 | 3.0 | Step down 1' & retest | PLPER-W2@5.5 | 5.5 | 10/1/2013 | 0.35 | Step down 1' & retest | PLPER-W2@6.5 | 6.5 | 10/4/2013 | 3.0 | Step down 1' & retest | PLPER-W2@7.5 | 7.5 | 10/11/2013 | ND | NFA |
| PLPER-W2Ea | 4 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-W2Na | 4 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-W2Sa | 4 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-W2Wa | 4 | 11/22/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-W3 | 3.5 | 9/24/2013 | ND | NFA | PLPER-W3 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-W4 | 3.5 | 9/24/2013 | 0.14 | NFA | PLPER-W4 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-N1 | 3.5 | 9/24/2013 | 1.4 | Step down 1' & retest | PLPER-N1 | 4.5 | 9/24/2013 | 2.3 | Step down 1' & retest | PLPER-N1@5.5 | 5.5 | 10/1/2013 | 1.9 | Step down 1' & retest | PLPER-N1@6.5 | 6.5 | 10/4/2013 | 0.85 | Step down 1' & retest | PLPER-N1@7.5 | 7.5 | 10/11/2013 | 0.19 | NFA |
| PLPER-N1Na | 4 | 12/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-N1Ea | 4 | 12/10/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-N1Sa | 4 | 12/10/2013 | 0.15 | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-N1Wa | 4 | 12/10/2013 | 0.088 | NFA | | | | | | | | | | | | | | | | | | | | |
| PLPER-N2 | 3.5 | 9/24/2013 | ND | NFA | PLPER-N2 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-N3 | 3.5 | 9/24/2013 | 1.5 | Step down 1' & retest | PLPER-N3 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| PLPER-N4 | 3.5 | 9/24/2013 | ND | NFA | PLPER-N4 | 4.5 | 9/24/2013 | ND | NFA | | | | | | | | | | | | | | | |
| **No Excavation Area** | | | | | | | | | | | | | | | | | | | | | | | | |
| NX1 | 1 | 11/19/2013 | 7.3 | Step down 2' & retest | NX1 | 2 | 12/3/2013 | ND | NFA | | | | | | | | | | | | | | | |
| NX1CA | 2 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| NX1CB | 2 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| NX2 | 1 | 11/19/2013 | 5.3 | Step down 2' & retest | NX2 | 2 | 12/3/2013 | ND | NFA | | | | | | | | | | | | | | | |
| NX2CA | 2 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |

**Table 1**
**PCB Confirmation Sample Results**
**Former Agricultural Park, Riverside, California**

| Phase 2 Confirmation Samples | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | | Step Out & Retest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action | Sample ID | Sample Depth (fbg) | Date Collected | PCBs (mg/kg) | Action |
| NX2CB | 2 | 12/12/2013 | ND | NFA | | | | | | | | | | | | | | | | | | | | |
| NX3 | 1 | 11/19/2013 | 0.12 | NFA | | | | | | | | | | | | | | | | | | | | |
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Notes:
NFA = No further action. Result is <0.22 mg/kg. Or step out sample merged into a larger excavation.
mg/kg = milligrams per kilogram
fbg = feet below grade
Shaded cells in far right columns indicate step out sample results that are listed vertically down the page.

**Table 2**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**METALS**
**Former Agricultural Park, Riverside, California**

| Sample Number | Date Collected | Depth (ft) | Sb (mg/kg) | As (mg/kg) | Ba (mg/kg) | Be (mg/kg) | Cd (mg/kg) | Cr (mg/kg) | Cr VI (mg/kg) | Co (mg/kg) | Cu (mg/kg) | Pb (mg/kg) | Hg (mg/kg) | Mo (mg/kg) | Ni (mg/kg) | Se (mg/kg) | Ag (mg/kg) | Tl (mg/kg) | V (mg/kg) | Zn (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-1Na | 7/12/2013 | 4 | ND<3.0 | ND<1.0 | **231** | **0.90** | **1.21** | **37.8** | **0.275** | **13.3** | **17** | **10.8** | ND<0.14 | ND<1.0 | **11** | ND<1.0 | ND<0.5 | ND<1.0 | **49.8** | **75.8** |
| B-1E | 7/12/2013 | 3 | ND<3.0 | **1.08** | **165** | **1.0** | **1.19** | **40.5** | **0.288** | **12.4** | **20.7** | **14.6** | ND<0.14 | ND<1.0 | **14.8** | ND<1.0 | ND<0.5 | ND<1.0 | **53.2** | **73.3** |
| B-1S | 7/12/2013 | 3 | ND<3.0 | ND<1.0 | **318** | **1.0** | **1.33** | **39.4** | **0.225** | **17.1** | **19.5** | **11.5** | ND<0.14 | ND<1.0 | **12.5** | ND<1.0 | ND<0.5 | ND<1.0 | **52.6** | **79.9** |
| B-1Wa | 7/12/2013 | 3 | ND<3.0 | ND<1.0 | **205** | **0.80** | **1.25** | **38.6** | **0.257** | **13.9** | **17.3** | **12.1** | ND<0.14 | ND<1.0 | **11.9** | ND<1.0 | ND<0.5 | ND<1.0 | **47.8** | **79.1** |
| B-1B | 7/12/2013 | 5 | ND<3.0 | ND<1.0 | **309** | **0.70** | **0.80** | **21.1** | **0.0343** | **15.1** | **9.2** | ND<0.5 | ND<0.14 | ND<1.0 | **6.96** | ND<1.0 | ND<0.5 | ND<1.0 | **42.4** | **50.2** |
| Background Concentration(1) | | | ND | 5.6 | 175 | 0.643 | ND | 24.6 | -- | 12.5 | 21.6 | 11.6 | ND | ND | 17.3 | ND | ND | ND | 53 | 48.3 |
| Res RSL(2) | | | 31 | 0.062 | 15,000 | 16 | 4 | 120,000 (3) | 0.29 | 23 | 3,100 | 80 | 10 | 390 | 1,500 | 390 | 390 | 0.78 | 390 | 23,000 |

Notes:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sb | = | antimony | Pb | = | lead | Zn | = | zinc |
| As | = | arsenic | Hg | = | mercury | ND | = | not detected |
| Ba | = | barium | Mo | = | molybdenum | mg/kg | = | milligrams per kilogram |
| Be | = | beryllium | Ni | = | nickel | | = | highlighted value exceeds background concentration |
| Cd | = | cadmium | Se | = | selenium | | = | sample and soil in vicinity removed during subsequent excavation |
| Cr | = | chromium | Ag | = | silver | (1) | | Frey Environmental letter to DTSC dated November 14, 2005. |
| Co | = | cobalt | Tl | = | thallium | (2) | | DTSC HERO Note 3 (May 21, 2013) and USEPA Regional Screening Levels (November 2013). |
| Cu | = | copper | V | = | vanadium | (3) | | USEPA RSL for chromium (III). |

**Table 3a**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**DIOXINS/FURANS**
**Former Agricultural Park, Riverside, California**

| Sample ID | B-67@5 | B-144@2 | B-144S@1 | B-144N@1 | B-144E@1 | B-144W@1 | B-159@2 | B-159B@4 | B-159S@1 | B-159Sa@2 | B-159Sb@2.5 | B-159N@1 | B-159Na@2 | B-159Nb@2.5 | B-159E@1 | B-159Ea@2 | B-159Eb@2.5 | B-159W@1 | B-159WaB@2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 8/6/13 | 7/11/13 | 8/6/13 | 9/5/13 | 7/11/13 | 8/6/13 | 9/5/13 | 7/11/13 | 8/6/13 | 9/5/13 | 7/11/13 | 8/6/13 |
| Units | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g |
| | | | | | | | | | | | | | | | | | | | |
| 2,3,7,8-Tetra CDD* | <0.151 | <0.160 | <0.187 | <0.0757 | <0.160 | <0.115 | <0.347 | <0.169 | <0.420 | <0.492 | <0.160 | <0.367 | <0.447 | <0.282 | <0.450 | <0.243 | <0.154 | <0.274 | <0.427 |
| 1,2,3,7,8-Penta CDD | <0.261 | <0.190 | <0.249 | <0.178 | <0.246 | <0.242 | 0.449J | <0.181 | 0.924J | <1.14 | <0.247 | 0.778J | <0.843 | <0.433 | 0.667J | 0.593J | <0.194 | 0.744J | <0.715 |
| 1,2,3,4,7,8-Hexa CDD | <0.310 | <0.387 | <0.326 | <0.169 | <0.336 | <0.151 | <0.915 | <0.204 | 0.869J | <1.83 | <0.184 | 0.884J | <0.693 | <0.356 | 0.977J | 0.447J | <0.235 | 0.681J | <0.765 |
| 1,2,3,6,7,8-Hexa CDD | <0.332 | <0.399 | <0.323 | 0.423J | <0.350 | 0.384J | 2.10J | <0.205 | 2.81J | <2.02 | <0.187 | 2.54J | 3.21J | 0.689J | 2.70J | 1.95J | <0.230 | 2.35J | 3.03J |
| 1,2,3,7,8,9-Hexa CDD | <0.325 | <0.391 | <0.316 | 0.608J | 0.532J | 0.647J | 1.49J | <0.207 | 2.02J | <1.95 | <0.188 | 2.02J | 2.24J | <1.01 | 2.11J | <1.16 | <0.235 | 1.84J | 1.93J |
| 1,2,3,4,6,7,8-Hepta CDD | 0.868J | <0.720 | <0.442 | 3.20J | 2.79J | 3.68J | 32.0 | 0.433J | 39.8 | 32.8 | <0.411 | 42.0 | 59.6 | 7.25 | 41.4 | 29.9 | <0.412 | 35.8 | 38.5 |
| Octa CDD | 3.99J | 3.14J | 1.24J | 25.7 | 21.4 | 26.9 | 262 | 2.59J | 329 | 299 | <1.03 | 336 | 562 | 55.5 | 358 | 266 | <1.63 | 327 | 350 |
| 2,3,7,8-Tetra CDF** | 0.966J | <0.144 | <0.186 | 0.587J | 0.620J | 0.531J | 8.16 | <0.321 | 17.9 | 16.4 | <0.137 | 19.8 | 13.7 | 3.15 | 17.2 | 11.7 | <0.255 | 15.8 | 19.0 |
| 1,2,3,7,8-Penta CDF | 0.334J | <0.183 | <0.321 | <0.223 | <0.322 | 0.241J | 2.77J | <0.167 | 5.25 | 5.97 | <0.159 | 4.87J | 4.53J | <0.746 | 5.26 | 3.59J | <0.215 | 4.38J | 6.02 |
| 2,3,4,7,8-Penta CDF | 2.48J | <0.173 | <0.327 | 0.483J | <0.327 | 0.357J | 19.8 | <0.162 | 28.9 | 30.8 | <0.159 | 28.0 | 31.0 | 5.46 | 30.6 | 24.7 | <0.195 | 24.3 | 38.3 |
| 1,2,3,4,7,8-Hexa CDF | 1.47J | <0.119 | <0.103 | <0.129 | <0.193 | <0.155 | 9.45 | <0.168 | 18.4 | 14.9 | <0.0913 | 17.1 | 15.3 | 2.64J | 18.8 | 11.5 | <0.146 | 15.4 | 19.0 |
| 1,2,3,6,7,8-Hexa CDF | <0.217 | <0.114 | <0.0713 | <0.130 | <0.184 | <0.145 | 2.70J | <0.162 | 4.42J | 3.56J | <0.0934 | 4.21J | 3.95J | 0.625J | 4.76J | 2.70J | <0.145 | 3.79J | 4.14J |
| 2,3,4,6,7,8-Hexa CDF | <0.228 | <0.121 | <0.104 | 0.268J | <0.191 | <0.154 | 3.10J | <0.172 | 4.93J | 4.07J | <0.0969 | 5.30 | 4.84J | 0.784J | 4.93J | 3.51J | <0.152 | 4.30J | 5.32 |
| 1,2,3,7,8,9-Hexa CDF | <0.312 | <0.157 | <0.142 | 0.261J | <0.240 | <0.187 | 0.905J | <0.226 | 1.50J | <1.36 | <0.124 | <1.42 | 1.57J | 0.413J | 1.62J | 1.26J | <0.196 | 1.42J | 1.99J |
| 1,2,3,4,6,7,8-Hepta CDF | <0.443 | <0.127 | <0.128 | <0.535 | <0.649 | <0.779 | 9.69 | <0.247 | 12.3 | 10.7 | <0.0865 | 12.8 | 14.2 | 3.28J | 12.8 | 9.69 | <0.162 | 10.9 | 12.7 |
| 1,2,3,4,7,8,9-Hepta CDF | <0.187 | <0.176 | <0.167 | <0.150 | <0.206 | <0.181 | <0.395 | <0.334 | <0.715 | <1.07 | <0.116 | 0.814J | 1.06J | <0.372 | <0.570 | <0.471 | <0.228 | 0.785J | <0.846 |
| Octa CDF | <0.552 | <0.646 | <0.350 | 1.40J | 1.38J | 1.40J | 18.2 | <0.558 | 19.3 | 20.5 | <0.230 | 18.4 | 31.8 | 13.1 | 20.4 | 27.1 | <0.415 | 18.9 | 21.7 |
| Total Tetra CDD | <0.151 | <0.160 | <0.185 | <0.0757 | <0.160 | <0.115 | <0.561 | <0.169 | 0.665 | <0.492 | <0.160 | 1.21 | <0.447 | <0.282 | 1.73 | 0.709 | <0.154 | 1.61 | <0.427 |
| Total Penta CDD | <0.261 | <0.190 | <0.249 | <0.178 | <0.246 | <0.242 | 4.72 | <0.181 | 6.09 | <1.14 | <0.247 | 4.62 | 3.43 | 0.461 | 4.72 | 1.99 | <0.194 | 5.03 | <5.57 |
| Total Hexa CDD | <0.332 | <0.399 | <0.326 | 2.31 | 0.532 | 2.26 | 15.6 | <0.207 | 21.9 | 13.6 | <0.188 | 21.1 | 21.5 | 3.27 | 23.1 | 11.9 | <0.235 | 19.5 | 21.6 |
| Total Hepta CDD | 1.71 | 0.522 | <0.442 | 7.84 | 6.80 | 8.27 | 79.6 | 0.835 | 90.4 | 80.8 | <0.411 | 94.9 | 131 | 15.0 | 94.5 | 72.0 | <0.412 | 84.7 | 82.8 |
| Total Tetra CDF | 32.1 | <0.144 | <0.186 | 5.66 | 4.89 | 6.66 | 331 | <0.321 | 610 | 580 | <0.137 | 638 | 498 | 90.9 | 595 | 390 | 0.918 | 464 | 641 |
| Total Penta CDF | 14.6 | 0.392 | <0.327 | 4.15 | 2.35 | 3.90 | 154 | <0.921 | 299 | 244 | <0.159 | 303 | 245 | 43.0 | 300 | 188 | 0.331 | 246 | 299 |
| Total Hexa CDF | 3.70 | <0.157 | <0.142 | 2.26 | 0.345 | 0.718 | 45.7 | <0.226 | 76.7 | 63.8 | <0.124 | 78.2 | 72.0 | 12.1 | 80.0 | 54.8 | <0.196 | 65.6 | 81.7 |
| Total Hepta CDF | ND | <0.176 | <0.167 | <1.44 | <1.45 | <1.50 | 10.2 | <0.334 | 13.2 | 10.7 | <0.116 | 27.3 | 15.3 | 3.28 | 26.0 | 9.69 | <0.228 | 12.4 | 12.7 |

Notes:
pg/g = picograms per gram
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan

**Table 3a**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**DIOXINS/FURANS**
**Former Agricultural Park, Riverside, California**

| Sample ID | B-159Wb@2.5 | B-162@2 | B-162S@1 | B-162N@1 | B-162E@1 | B-162W@1 | B-176B@2.5 | TP-29@3 | TP-30B@3 | TP-30B@5 | TP-30Sa@3 | TP-30Sa@4 | TP-30Na@3 | TP-30Na@4 | TP-30Wa@1 | TP-30Wb@6 | TP-30Wc@6 | TP-30WaB@4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | 9/5/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 7/11/13 | 8/6/13 | 7/11/13 | 8/6/13 | 7/11/13 | 8/6/13 | 7/11/13 | 9/5/13 | 9/5/13 | 8/6/13 |
| Units | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g | pg/g |
| | | | | | | | | | | | | | | | | | | |
| 2,3,7,8-Tetra CDD* | <0.178 | <0.136 | <0.204 | <0.209 | <0.186 | <0.185 | <0.157 | <0.211 | <0.367 | <0.167 | 1.31 | <0.152 | <0.404 | <0.482 | <0.269 | <0.149 | <0.327 | <0.331 |
| 1,2,3,7,8-Penta CDD | <0.198 | <0.189 | 0.782J | 0.912J | 0.632J | 0.771J | <0.231 | <0.284 | 1.90J | <0.285 | 7.44 | <0.216 | 4.14J | <0.926 | <1.39 | <0.198 | <0.348 | <1.31 |
| 1,2,3,4,7,8-Hexa CDD | <0.270 | <0.357 | 0.511J | 0.820J | 0.764J | 0.979J | <0.258 | <0.385 | 1.45J | <0.357 | 5.34 | <0.192 | 3.23J | <0.656 | 1.43J | <0.206 | <0.194 | <0.915 |
| 1,2,3,6,7,8-Hexa CDD | <0.281 | <0.361 | 3.11J | 4.21J | 3.61J | 3.86J | 0.504J | <0.389 | 5.68 | <0.379 | 26.3 | <0.203 | 13.9 | <0.672 | 6.21 | <0.217 | <0.197 | 2.28J |
| 1,2,3,7,8,9-Hexa CDD | <0.280 | <0.354 | 1.86J | 2.25J | 2.27J | 2.16J | 0.440J | <0.380 | 3.72J | <0.373 | 16.0 | <0.200 | 9.77 | <0.673 | 3.64J | <0.214 | <0.198 | 1.07J |
| 1,2,3,4,6,7,8-Hepta CDD | <0.618 | 0.522J | 54.5 | 87.3 | 67.4 | 75.7 | 9.38 | 4.39J | 21.5 | <0.556 | 219 | <0.527 | 106 | <0.781 | 115 | <0.442 | 3.63J | 37.8 |
| Octa CDD | 1.42 | 3.06J | 448 | 789 | 589 | 671 | 87.1 | 40.8 | 95.7 | 3.34J | 2,040 | 2.24J | 891 | 5.4J | 1,190 | 1.19J | 35.5 | 384 |
| 2,3,7,8-Tetra CDF** | <0.223 | <0.183 | 0.672J | 1.36 | 1.26 | 1.11 | <0.157 | 8.02 | 141 | 1.15 | 814 | <0.282 | 448 | <0.379 | 114 | <0.228 | 3.52 | 52.2 |
| 1,2,3,7,8-Penta CDF | <0.182 | <0.241 | 0.479J | 0.562J | 0.793J | <0.403 | <0.204 | 3.32J | 36.8 | 0.391 | 157 | <0.140 | 81.9 | <0.566 | 24.0 | <0.181 | 1.40J | 9.73 |
| 2,3,4,7,8-Penta CDF | <0.174 | <0.233 | 1.30J | 1.75J | 1.96J | 1.54J | <0.189 | 7.29 | 255 | 2.57 | 916 | <0.141 | 509 | <0.576 | 81.2 | <0.168 | 5.48 | 32.1 |
| 1,2,3,4,7,8-Hexa CDF | <0.165 | <0.145 | 1.66J | 1.75J | 1.62J | 1.56J | <0.137 | 4.69J | 170 | 1.26 | 575 | <0.0932 | 323 | <0.504 | 50.0 | <0.130 | 2.24J | 18.4 |
| 1,2,3,6,7,8-Hexa CDF | <0.165 | <0.144 | 2.23J | 1.97J | 1.52J | 1.82J | <0.134 | <1.56 | 30.4 | <0.266 | 113 | <0.101 | 58.3 | <0.506 | 15.1 | <0.128 | 0.692J | 5.61 |
| 2,3,4,6,7,8-Hexa CDF | <0.178 | <0.158 | 4.50J | 3.18J | 3.00J | 3.00J | <0.138 | 1.13J | 31.3 | <0.262 | 109 | <0.101 | 60.9 | <0.532 | 13.5 | <0.135 | <0.510 | 4.51J |
| 1,2,3,7,8,9-Hexa CDF | <0.235 | <0.202 | 0.594J | <0.230 | 0.470J | 0.546J | <0.169 | 0.872J | 16.7 | <0.355 | 63.3 | <0.128 | 32.8 | <0.727 | 7.91 | <0.172 | <0.323 | 3.25J |
| 1,2,3,4,6,7,8-Hepta CDF | <0.160 | <0.152 | 12.7 | 20.9 | 16.9 | 18.0 | <1.13 | 2.57J | 49.9 | <0.470 | 165 | <0.119 | 102 | <0.328 | 31.6 | <0.125 | 1.25J | 10.5 |
| 1,2,3,4,7,8,9-Hepta CDF | <0.271 | <0.202 | 1.14J | 1.52J | 1.28J | 1.28J | <0.184 | 0.954J | 5.00 | <0.597 | 21.9 | <0.139 | 106 | <0.444 | 5.64 | <0.178 | <0.237 | <1.73 |
| Octa CDF | <0.328 | <0.823 | 24.9 | 41.8 | 31.9 | 33.3 | 4.60J | 6.39J | 11.6 | <0.913 | 112 | <0.744 | 45.5 | <1.15 | 55.8 | <0.376 | 1.91J | 17.6 |
| Total Tetra CDD | <0.178 | <0.136 | <0.204 | <0.209 | <0.186 | <0.185 | <0.157 | <0.211 | 12.7 | <0.167 | 49.3 | <0.152 | 22.7 | <0.482 | 9.04 | <0.149 | <0.324 | <0.331 |
| Total Penta CDD | <0.198 | <0.189 | 2.37 | 1.63 | 1.53 | 1.51 | <0.231 | <0.284 | 44.3 | <0.285 | 69.9 | <0.216 | 79.3 | <0.926 | 8.34 | <0.198 | <0.348 | 2.69 |
| Total Hexa CDD | <0.281 | <0.361 | 17.6 | 25.3 | 23.2 | 24.7 | 1.69 | <1.14 | 45.1 | <0.379 | 203 | <0.203 | 112 | <0.673 | 56.1 | <0.217 | 0.971 | 16.8 |
| Total Hepta CDD | <0.618 | 0.522 | 105 | 178 | 142 | 159 | 19.8 | 8.89 | 38.1 | <1.13 | 411 | <0.527 | 203 | <1.35 | 216 | <0.442 | 6.95 | 72.2 |
| Total Tetra CDF | <0.223 | <0.183 | 42.6 | 29.3 | 32.2 | 31.2 | <0.157 | 139 | 5,720 | 46.1 | 24,000 | <0.282 | 11,400 | 3.17 | 1,820 | <0.228 | 94.6 | 729 |
| Total Penta CDF | <0.182 | 0.392 | 85.4 | 61.6 | 54.3 | 58.0 | <0.204 | 67.4 | 2,250 | 18.6 | 8,340 | <1.06 | 4,200 | 0.761 | 698 | <0.181 | 37.4 | 261 |
| Total Hexa CDF | <0.235 | <0.202 | 57.7 | 50.7 | 45.3 | 49.1 | 0.968 | 12.4 | 541 | 2.0 | 1,860 | <0.128 | 1,040 | <0.727 | 193 | <0.172 | 7.29 | 64.1 |
| Total Hepta CDF | <0.271 | <0.202 | 39.0 | 63.7 | 50.6 | 55.0 | <3.64 | 6.34 | 75.1 | <0.597 | 302 | <0.139 | 168 | <0.444 | 79.5 | <0.178 | 2.67 | 25.1 |

**Table 3a**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**DIOXINS/FURANS**
**Former Agricultural Park, Riverside, California**

| Sample ID<br>Sampling Date<br>Units | TP-103@1<br>7/11/13<br>pg/g | TP-103S@1<br>7/11/13<br>pg/g | TP-103N@1<br>7/11/13<br>pg/g | TP-103E@1<br>7/11/13<br>pg/g | TP-103W@2<br>7/11/13<br>pg/g | S-22+20E@2<br>7/11/13<br>pg/g | S-22+20E N@1<br>7/11/13<br>pg/g | S-22+20E S@1<br>7/11/13<br>pg/g | S-22+20E Sa@2<br>8/6/13<br>pg/g | S-22+20E E@1<br>7/11/13<br>pg/g | S-22+20E Ea@2<br>8/6/13<br>pg/g | S-22+20E W@1<br>7/11/13<br>pg/g | S-22+20E Wa@2<br>8/6/13<br>pg/g |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| 2,3,7,8-Tetra CDD* | <0.150 | <0.188 | <0.143 | <0.316 | <0.248 | <0.0762 | <0.204 | <0.268 | <0.158 | <0.173 | <0.139 | <0.172 | <0.131 |
| 1,2,3,7,8-Penta CDD | <0.287 | <0.211 | <0.232 | <0.480 | <0.302 | <0.218 | <0.428 | 4.26J | <0.241 | 1.08J | <0.228 | 0.583J | <0.125 |
| 1,2,3,4,7,8-Hexa CDD | <0.232 | <0.424 | <0.208 | <0.308 | <0.441 | <0.206 | 0.877J | 29.7 | <0.320 | 3.63J | <0.397 | 1.38J | <0.295 |
| 1,2,3,6,7,8-Hexa CDD | 0.529J | <0.443 | 0.535J | 0.675J | 0.641J | <0.406 | 4.08J | 40.2 | <0.314 | 11.2 | <0.401 | 5.76 | <0.310 |
| 1,2,3,7,8,9-Hexa CDD | 1.18J | <0.434 | 0.680J | <0.546 | <0.403 | 0.567J | 2.81J | 22.4 | <0.321 | 7.52 | <0.404 | 3.41J | <0.307 |
| 1,2,3,4,6,7,8-Hepta CDD | <0.464 | 7.41J | 8.23 | 5.79 | 14.8 | 9.11 | 90.0 | 1,110 | 0.522J | 350 | 6.32 | 161 | 4.24J |
| Octa CDD | 2.98J | 50.9 | 61.5 | 50.3 | 114 | 81.8 | 600 | 4,600 | 3.93J | 3,100 | 45.9 | 1560 | 23.8 |
| 2,3,7,8-Tetra CDF** | <0.130 | 4.92J | 2.25 | 3.49 | 1.91 | <0.103 | 0.443J | 0.531J | <0.143 | 0.239J | <0.217 | 0.271J | <0.162 |
| 1,2,3,7,8-Penta CDF | <0.172 | 4.11J | 0.808J | 1.54J | 0.425J | <0.209 | 0.408J | 1.39J | <0.113 | 0.357J | <0.133 | 0.321J | <0.156 |
| 2,3,4,7,8-Penta CDF | <0.149 | 2.40J | 0.752J | 2.18J | 0.593J | <0.212 | 0.704J | 1.70J | <0.113 | 0.233J | <0.133 | 0.583J | <0.155 |
| 1,2,3,4,7,8-Hexa CDF | <0.0822 | 2.27 | 0.625J | <0.863 | <0.459 | <0.117 | 1.00J | 6.83 | <0.100 | 2.70J | <0.190 | 1.76J | <0.217 |
| 1,2,3,6,7,8-Hexa CDF | <0.0784 | 1.32 | <0.464 | 0.685J | <0.347 | <0.111 | <0.519 | 3.29J | <0.0996 | 1.34J | <0.202 | 0.94J | <0.228 |
| 2,3,4,6,7,8-Hexa CDF | <0.0823 | 0.607 | 0.521J | 0.574J | <0.440 | <0.112 | <0.413 | 5.05 | <0.104 | 1.67J | <0.196 | 1.06J | <0.229 |
| 1,2,3,7,8,9-Hexa CDF | 0.501J | <0.128 | <0.123 | <0.195 | <0.122 | <0.142 | <0.678 | 4.57J | <0.129 | <0.691 | <0.256 | <0.965 | <0.293 |
| 1,2,3,4,6,7,8-Hepta CDF | <0.0995 | 3.88 | 2.60J | 1.69J | 3.69J | 1.51J | 11.2 | 64.5 | <0.163 | 52.1 | <0.657 | 22.7 | 0.368 |
| 1,2,3,4,7,8,9-Hepta CDF | <0.136 | <0.137 | <0.123 | <0.120 | <0.190 | <0.188 | <0.188 | 5.04 | <0.212 | 4.96 | <0.236 | 1.99J | <0.174 |
| Octa CDF | <0.310 | 2.01J | 2.67J | 1.68J | 2.34J | 4.41J | 17.6 | 67.3 | <0.415 | 253 | 0.901J | 69.1 | <0.951 |
| Total Tetra CDD | <0.150 | 2.80 | 0.573 | 1.02 | 0.728 | <0.0762 | <0.203 | 8.00 | <0.158 | <0.173 | <0.139 | <0.172 | <0.131 |
| Total Penta CDD | 0.396 | 0.953 | <1.04 | <0.480 | <0.302 | <0.218 | 3.30 | 99.4 | <0.241 | 5.26 | <0.228 | 1.07 | <0.125 |
| Total Hexa CDD | 1.71 | 3.92 | 3.10 | 3.74 | 5.41 | 2.27 | 34.5 | 679 | <0.321 | 69.3 | 0.615 | 40.7 | <0.376 |
| Total Hepta CDD | <0.464 | 16.3 | 16.5 | 14.7 | 30.1 | 20.9 | 257 | 2,910 | 0.522 | 693 | 18.1 | 413 | 9.47 |
| Total Tetra CDF | <0.130 | 69.3 | 22.6 | 56.5 | 27.0 | <0.103 | 3.28 | 6.81 | <0.143 | 1.42 | <0.217 | 1.39 | <0.162 |
| Total Penta CDF | <0.172 | 39.3 | 12.6 | 24.3 | 13.0 | <0.212 | 7.37 | 27.1 | <0.452 | 6.81 | <1.27 | 6.53 | <1.11 |
| Total Hexa CDF | 0.501 | 11.9 | 5.69 | 3.63 | 5.06 | 1.05 | 17.4 | 136 | <0.129 | 43.8 | <0.585 | 29.0 | <0.241 |
| Total Hepta CDF | <0.136 | 3.88 | 4.77 | 3.01 | 5.97 | 4.22 | 37.5 | 227 | <0.212 | 196 | 1.57 | 82.3 | 0.368 |

**Table 3b**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**Dioxin/Furan Congener Concentrations Expressed as TCDD Equivalents[2]**
**Former Agricultural Park, Riverside, California**

| Congener | TEF [WHO-05] [1] | B-67@5 7/11/13 pg/g | B-144@2 7/11/13 pg/g | B-144S@1 7/11/13 pg/g | B-144N@1 7/11/13 pg/g | B-144E@1 7/11/13 pg/g | B-144W@1 7/11/13 pg/g | B-159@2 7/11/13 pg/g | B-159B @4 8/6/13 pg/g | B-159S@1 7/11/13 pg/g | B-159 Sa @ 2' 8/6/13 pg/g | B-159 Sb @ 2.5' 9/5/13 pg/g | B-159N@1 7/11/13 pg/g | B-159 Na @ 2' 8/6/13 pg/g |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| 2,3,7,8-Tetra CDD* | 1 | 0.0755 | 0.08 | 0.0935 | 0.03785 | 0.08 | 0.0575 | 0.1735 | 0.0845 | 0.21 | 0.246 | 0.08 | 0.1835 | 0.2235 |
| 1,2,3,7,8-Penta CDD | 1 | 0.1305 | 0.095 | 0.1245 | 0.089 | 0.123 | 0.121 | 0.449 | 0.0905 | 0.924 | 0.57 | 0.1235 | 0.778 | 0.4215 |
| 1,2,3,4,7,8-Hexa CDD | 0.1 | 0.0155 | 0.01935 | 0.0163 | 0.00845 | 0.0168 | 0.00755 | 0.04575 | 0.0102 | 0.0869 | 0.0915 | 0.0092 | 0.0884 | 0.03465 |
| 1,2,3,6,7,8-Hexa CDD | 0.1 | 0.0166 | 0.01995 | 0.01615 | 0.0423 | 0.0175 | 0.0384 | 0.21 | 0.01025 | 0.281 | 0.101 | 0.00935 | 0.254 | 0.321 |
| 1,2,3,7,8,9-Hexa CDD | 0.1 | 0.01625 | 0.01955 | 0.0158 | 0.0608 | 0.0532 | 0.0647 | 0.149 | 0.01035 | 0.202 | 0.0975 | 0.0094 | 0.202 | 0.224 |
| 1,2,3,4,6,7,8-Hepta CDD | 0.01 | 0.00868 | 0.0036 | 0.00221 | 0.032 | 0.0279 | 0.0368 | 0.32 | 0.00433 | 0.398 | 0.328 | 0.002055 | 0.42 | 0.596 |
| Octa CDD | 0.0003 | 0.001197 | 0.000942 | 0.000372 | 0.00771 | 0.00642 | 0.00807 | 0.0786 | 0.000777 | 0.0987 | 0.0897 | 0.0001545 | 0.1008 | 0.1686 |
| 2,3,7,8-Tetra CDF** | 0.1 | 0.0966 | 0.0072 | 0.0093 | 0.0587 | 0.062 | 0.0531 | 0.816 | 0.01605 | 1.79 | 1.64 | 0.00685 | 1.98 | 1.37 |
| 1,2,3,7,8-Penta CDF | 0.03 | 0.01002 | 0.002745 | 0.004815 | 0.003345 | 0.00483 | 0.00723 | 0.0831 | 0.002505 | 0.1575 | 0.1791 | 0.002385 | 0.1461 | 0.1359 |
| 2,3,4,7,8-Penta CDF | 0.3 | 0.744 | 0.02595 | 0.04905 | 0.1449 | 0.04905 | 0.1071 | 5.94 | 0.0243 | 8.67 | 9.24 | 0.02385 | 8.4 | 9.3 |
| 1,2,3,4,7,8-Hexa CDF | 0.1 | 0.147 | 0.00595 | 0.00515 | 0.00645 | 0.00965 | 0.00775 | 0.945 | 0.0084 | 1.84 | 1.49 | 0.004565 | 1.71 | 1.53 |
| 1,2,3,6,7,8-Hexa CDF | 0.1 | 0.01085 | 0.0057 | 0.003565 | 0.0065 | 0.0092 | 0.00725 | 0.27 | 0.0081 | 0.442 | 0.356 | 0.00467 | 0.421 | 0.395 |
| 2,3,4,6,7,8-Hexa CDF | 0.1 | 0.0114 | 0.00605 | 0.0052 | 0.0268 | 0.00955 | 0.0077 | 0.31 | 0.0086 | 0.493 | 0.407 | 0.004845 | 0.53 | 0.484 |
| 1,2,3,7,8,9-Hexa CDF | 0.1 | 0.0156 | 0.00785 | 0.0071 | 0.0261 | 0.012 | 0.00935 | 0.0905 | 0.0113 | 0.15 | 0.068 | 0.0062 | 0.071 | 0.157 |
| 1,2,3,4,6,7,8-Hepta CDF | 0.01 | 0.002215 | 0.000635 | 0.00064 | 0.002675 | 0.003245 | 0.003895 | 0.0969 | 0.001235 | 0.123 | 0.107 | 0.0004325 | 0.128 | 0.142 |
| 1,2,3,4,7,8,9-Hepta CDF | 0.01 | 0.000935 | 0.00088 | 0.000835 | 0.00075 | 0.00103 | 0.000905 | 0.001975 | 0.00167 | 0.003575 | 0.00535 | 0.00058 | 0.00814 | 0.0106 |
| Octa CDF | 0.0003 | 0.0000828 | 0.0000969 | 0.0000525 | 0.00042 | 0.000414 | 0.00042 | 0.00546 | 0.0000837 | 0.00579 | 0.00615 | 0.0000345 | 0.00552 | 0.00954 |
| **Total TCDD Eqs.** | | 1.3 | 0.301 | 0.35 | 0.55 | 0.486 | 0.539 | 9.98 | 0.293 | 15.875 | 15.022 | 0.288 | 15.426 | 15.523 |

**Notes:**

TEF = Toxicity Equivalence Factor
pg/g = Picograms per gram (1E-6 mg/kg)
Total TCDD Eqs. Residential Screening Value is 4.5 pg/g (4.5E-6 mg/kg)
Non-detect values assumed to be present at concentration of 1/2 the laboratory detection limit; "J" Flagged values assumed to be present at estimated concentration.
Highlighted Value Exceeds Residential Screening Value for Total TCDD Eqs.
[1] = TEF Values as listed in Attachment A, Use of Dioxin TEFs in Calculating Dioxin TEQs at CERCLA and RCRA Sites. May 2013.
[2] = TCDD equivalent values based on the product of adjusted concentrations and TEF values for individual congeners listed above
TCDD Eqs. calculated only for congeners for which a TEF has been defined

**Table 3b**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**Dioxin/Furan Congener Concentrations Expressed as TCDD Equivalents[2]**
**Former Agricultural Park, Riverside, California**

| Congener | B-159 Nb @ 2.5'<br>9/5/13<br>pg/g | B-159E@1<br>7/11/13<br>pg/g | B-159 Ea @ 2'<br>8/6/13<br>pg/g | B-159 Eb @ 2.5'<br>9/5/13<br>pg/g | B-159W@1<br>7/11/13<br>pg/g | B-159 Wa @ 2'<br>8/6/13<br>pg/g | B-159 Wb @ 2.5'<br>9/5/13<br>pg/g | B-162@2<br>7/11/13<br>pg/g | B-162S@1<br>7/11/13<br>pg/g | B-162N@1<br>7/11/13<br>pg/g | B-162E@1<br>7/11/13<br>pg/g | B-162W@1<br>7/11/13<br>pg/g | B-176B@2.5<br>7/11/13<br>pg/g |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-Tetra CDD* | 0.141 | 0.225 | 0.1215 | 0.077 | 0.137 | 0.2135 | 0.089 | 0.068 | 0.102 | 0.1045 | 0.093 | 0.0925 | 0.0785 |
| 1,2,3,7,8-Penta CDD | 0.2165 | 0.667 | 0.593 | 0.097 | 0.744 | 0.3575 | 0.099 | 0.0945 | 0.782 | 0.912 | 0.632 | 0.771 | 0.1155 |
| 1,2,3,4,7,8-Hexa CDD | 0.0178 | 0.0977 | 0.0447 | 0.01175 | 0.0681 | 0.03825 | 0.0135 | 0.01785 | 0.0511 | 0.082 | 0.0764 | 0.0979 | 0.0129 |
| 1,2,3,6,7,8-Hexa CDD | 0.0689 | 0.27 | 0.195 | 0.0115 | 0.235 | 0.303 | 0.01405 | 0.01805 | 0.311 | 0.421 | 0.361 | 0.386 | 0.0504 |
| 1,2,3,7,8,9-Hexa CDD | 0.0505 | 0.211 | 0.058 | 0.01175 | 0.184 | 0.193 | 0.014 | 0.0177 | 0.186 | 0.225 | 0.227 | 0.216 | 0.044 |
| 1,2,3,4,6,7,8-Hepta CDD | 0.0725 | 0.414 | 0.299 | 0.00206 | 0.358 | 0.185 | 0.00309 | 0.00522 | 0.545 | 0.873 | 0.674 | 0.757 | 0.0938 |
| Octa CDD | 0.01665 | 0.1074 | 0.0798 | 0.0002445 | 0.0981 | 0.105 | 0.000426 | 0.000918 | 0.1344 | 0.2367 | 0.1767 | 0.2013 | 0.02613 |
| 2,3,7,8-Tetra CDF** | 0.315 | 1.72 | 1.17 | 0.01275 | 1.58 | 1.9 | 0.01115 | 0.00915 | 0.0672 | 0.136 | 0.126 | 0.111 | 0.00785 |
| 1,2,3,7,8-Penta CDF | 0.01119 | 0.1578 | 0.1077 | 0.003225 | 0.1314 | 0.1806 | 0.00273 | 0.003615 | 0.01437 | 0.01686 | 0.02379 | 0.006045 | 0.00306 |
| 2,3,4,7,8-Penta CDF | 1.638 | 9.18 | 7.41 | 0.02925 | 7.29 | 11.49 | 0.0261 | 0.03495 | 0.39 | 0.525 | 0.588 | 0.462 | 0.02835 |
| 1,2,3,4,7,8-Hexa CDF | 0.264 | 1.88 | 1.15 | 0.0073 | 1.54 | 1.9 | 0.00825 | 0.00725 | 0.166 | 0.175 | 0.162 | 0.156 | 0.00685 |
| 1,2,3,6,7,8-Hexa CDF | 0.0625 | 0.476 | 0.27 | 0.00725 | 0.379 | 0.414 | 0.00825 | 0.0072 | 0.223 | 0.197 | 0.152 | 0.182 | 0.0067 |
| 2,3,4,6,7,8-Hexa CDF | 0.0784 | 0.493 | 0.351 | 0.0076 | 0.43 | 0.532 | 0.0089 | 0.0079 | 0.45 | 0.318 | 0.3 | 0.3 | 0.0069 |
| 1,2,3,7,8,9-Hexa CDF | 0.0413 | 0.162 | 0.126 | 0.0098 | 0.142 | 0.199 | 0.01175 | 0.0101 | 0.0594 | 0.0115 | 0.047 | 0.0546 | 0.00845 |
| 1,2,3,4,6,7,8-Hepta CDF | 0.0328 | 0.128 | 0.0969 | 0.00081 | 0.109 | 0.127 | 0.0008 | 0.00076 | 0.127 | 0.209 | 0.169 | 0.18 | 0.00565 |
| 1,2,3,4,7,8,9-Hepta CDF | 0.00186 | 0.00285 | 0.002355 | 0.00114 | 0.00785 | 0.00423 | 0.001355 | 0.00101 | 0.0114 | 0.0152 | 0.0128 | 0.0128 | 0.00092 |
| Octa CDF | 0.00393 | 0.00612 | 0.00813 | 0.00006225 | 0.00567 | 0.00651 | 0.0000492 | 0.00012345 | 0.00747 | 0.01254 | 0.00957 | 0.00999 | 0.00138 |
| **Total TCDD Eqs.** | 3.033 | 16.20 | 12.083 | 0.290 | 13.439 | 18.149 | 0.312 | 0.304 | 3.627 | 4.470 | 3.83 | 4.00 | 0.50 |

**Table 3b**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**Dioxin/Furan Congener Concentrations Expressed as TCDD Equivalents[2]**
**Former Agricultural Park, Riverside, California**

| Congener | TP-29@3 7/11/13 pg/g | TP-30B@3 7/11/13 pg/g | TP-30B@5 8/6/13 pg/g | TP-30Sa@3 7/11/13 pg/g | TP-30 Sa@4' 8/6/13 pg/g | TP-30Na@3 7/11/13 pg/g | TP-30 Na@4 8/6/13 pg/g | TP-30Wa@1 7/11/13 pg/g | TP-30 WaB@4' 8/6/13 pg/g | TP-30 Wb@6' 9/4/13 pg/g | TP-30 Wc@6' 9/4/13 pg/g | TP-103@1 7/11/13 pg/g | TP-103S@1 7/11/13 pg/g |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| 2,3,7,8-Tetra CDD* | 0.1055 | 0.1835 | 0.0835 | 1.31 | 0.076 | 0.202 | 0.241 | 0.1345 | 0.1655 | 0.0745 | 0.1635 | 0.075 | 0.094 |
| 1,2,3,7,8-Penta CDD | 0.142 | 1.9 | 0.1425 | 7.44 | 0.108 | 4.14 | 0.463 | 0.695 | 0.655 | 0.099 | 0.174 | 0.1435 | 0.1055 |
| 1,2,3,4,7,8-Hexa CDD | 0.01925 | 0.145 | 0.01785 | 0.534 | 0.0096 | 0.323 | 0.0328 | 0.143 | 0.04575 | 0.0103 | 0.0097 | 0.0116 | 0.0212 |
| 1,2,3,6,7,8-Hexa CDD | 0.01945 | 0.568 | 0.01895 | 2.63 | 0.01015 | 1.39 | 0.0336 | 0.621 | 0.228 | 0.01085 | 0.00985 | 0.0529 | 0.02215 |
| 1,2,3,7,8,9-Hexa CDD | 0.019 | 0.372 | 0.01865 | 1.6 | 0.01 | 0.977 | 0.03365 | 0.364 | 0.107 | 0.0107 | 0.0099 | 0.118 | 0.0217 |
| 1,2,3,4,6,7,8-Hepta CDD | 0.0439 | 0.215 | 0.00278 | 2.19 | 0.002635 | 1.06 | 0.003905 | 1.15 | 0.378 | 0.00221 | 0.0363 | 0.00232 | 0.0741 |
| Octa CDD | 0.01224 | 0.02871 | 0.001002 | 0.612 | 0.000672 | 0.2673 | 0.001632 | 0.357 | 0.1152 | 0.000357 | 0.01065 | 0.000894 | 0.01527 |
| 2,3,7,8-Tetra CDF** | 0.802 | 14.1 | 0.115 | 81.4 | 0.0141 | 44.8 | 0.01895 | 11.4 | 5.22 | 0.0114 | 0.352 | 0.0065 | 0.492 |
| 1,2,3,7,8-Penta CDF | 0.0996 | 1.104 | 0.01173 | 4.71 | 0.0021 | 2.457 | 0.00849 | 0.72 | 0.2919 | 0.002715 | 0.042 | 0.00258 | 0.1233 |
| 2,3,4,7,8-Penta CDF | 2.187 | 76.5 | 0.771 | 274.8 | 0.02115 | 152.7 | 0.0864 | 24.36 | 9.63 | 0.0252 | 1.644 | 0.02235 | 0.72 |
| 1,2,3,4,7,8-Hexa CDF | 0.469 | 17 | 0.126 | 57.5 | 0.00466 | 32.3 | 0.0252 | 5 | 1.84 | 0.0065 | 0.224 | 0.00411 | 0.227 |
| 1,2,3,6,7,8-Hexa CDF | 0.078 | 3.04 | 0.0133 | 11.3 | 0.00505 | 5.83 | 0.0253 | 1.51 | 0.561 | 0.0064 | 0.0692 | 0.00392 | 0.132 |
| 2,3,4,6,7,8-Hexa CDF | 0.113 | 3.13 | 0.0131 | 10.9 | 0.00505 | 6.09 | 0.0266 | 1.35 | 0.451 | 0.00675 | 0.0255 | 0.004115 | 0.0607 |
| 1,2,3,7,8,9-Hexa CDF | 0.0872 | 1.67 | 0.01775 | 6.33 | 0.0064 | 3.28 | 0.03635 | 0.791 | 0.325 | 0.0086 | 0.01615 | 0.0501 | 0.0064 |
| 1,2,3,4,6,7,8-Hepta CDF | 0.0257 | 0.499 | 0.00235 | 1.65 | 0.000595 | 1.02 | 0.00164 | 0.316 | 0.105 | 0.000625 | 0.0125 | 0.0004975 | 0.0388 |
| 1,2,3,4,7,8,9-Hepta CDF | 0.00954 | 0.05 | 0.002985 | 0.219 | 0.000695 | 1.06 | 0.00222 | 0.0564 | 0.00865 | 0.00089 | 0.001185 | 0.00068 | 0.000685 |
| Octa CDF | 0.001917 | 0.00348 | 0.00013695 | 0.0336 | 0.0001116 | 0.01365 | 0.0001725 | 0.01674 | 0.00528 | 0.0000564 | 0.000573 | 0.0000465 | 0.000603 |
| **Total TCDD Eqs.** | 4.23 | 120.5 | 1.359 | 465.2 | 0.277 | 257.9 | 1.041 | 49.0 | 20.132 | 0.277 | 2.801 | 0.50 | 2.16 |

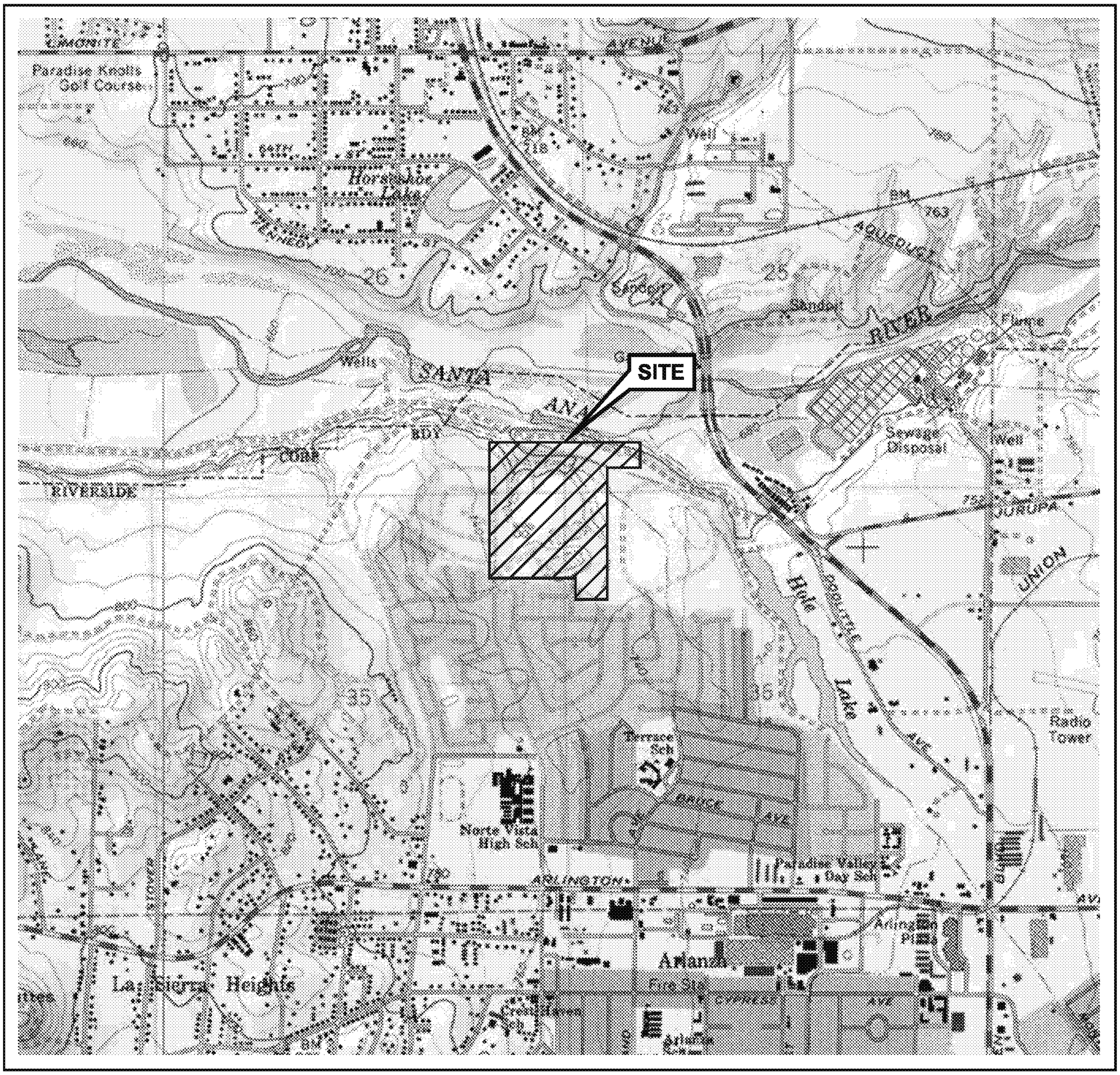
**Table 3b**
**RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES**
**Dioxin/Furan Congener Concentrations Expressed as TCDD Equivalents[2]**
**Former Agricultural Park, Riverside, California**

| Congener | TP-103N@1<br>7/11/13<br>pg/g | TP-103E@1<br>7/11/13<br>pg/g | TP-103W@2<br>7/11/13<br>pg/g | S-22+20E@2<br>7/11/13<br>pg/g | S-22+20E N@1<br>7/11/13<br>pg/g | S-22+20E S@1<br>7/11/13<br>pg/g | S-22+20 ESa @2'<br>8/6/13<br>pg/g | S-22+20E E@1<br>7/11/13<br>pg/g | S-22+20 EEa @ 2'<br>8/6/13<br>pg/g | S-22+20E W@1<br>7/11/13<br>pg/g | S-22+20 EWa @2'<br>8/6/13<br>pg/g |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| 2,3,7,8-Tetra CDD* | 0.0715 | 0.158 | 0.124 | 0.0381 | 0.102 | 0.134 | 0.079 | 0.0865 | 0.0695 | 0.086 | 0.0655 |
| 1,2,3,7,8-Penta CDD | 0.116 | 0.24 | 0.151 | 0.109 | 0.214 | 4.26 | 0.1205 | 1.08 | 0.114 | 0.583 | 0.0625 |
| 1,2,3,4,7,8-Hexa CDD | 0.0104 | 0.0154 | 0.02205 | 0.0103 | 0.0877 | 2.97 | 0.016 | 0.363 | 0.01985 | 0.138 | 0.01475 |
| 1,2,3,6,7,8-Hexa CDD | 0.0535 | 0.0675 | 0.0641 | 0.0203 | 0.408 | 4.02 | 0.0157 | 1.12 | 0.02005 | 0.576 | 0.0155 |
| 1,2,3,7,8,9-Hexa CDD | 0.068 | 0.0273 | 0.02015 | 0.0567 | 0.281 | 2.24 | 0.01605 | 0.752 | 0.0202 | 0.341 | 0.01535 |
| 1,2,3,4,6,7,8-Hepta CDD | 0.0823 | 0.0579 | 0.148 | 0.0911 | 0.9 | 11.1 | 0.00522 | 3.5 | 0.0632 | 1.61 | 0.0424 |
| Octa CDD | 0.01845 | 0.01509 | 0.0342 | 0.02454 | 0.18 | 1.38 | 0.001179 | 0.93 | 0.01377 | 0.468 | 0.00714 |
| 2,3,7,8-Tetra CDF** | 0.225 | 0.349 | 0.191 | 0.00515 | 0.0443 | 0.0531 | 0.00715 | 0.0239 | 0.01085 | 0.0271 | 0.0081 |
| 1,2,3,7,8-Penta CDF | 0.02424 | 0.0462 | 0.01275 | 0.003135 | 0.01224 | 0.0417 | 0.001695 | 0.01071 | 0.001995 | 0.00963 | 0.00234 |
| 2,3,4,7,8-Penta CDF | 0.2256 | 0.654 | 0.1779 | 0.0318 | 0.2112 | 0.51 | 0.01695 | 0.0699 | 0.01995 | 0.1749 | 0.02325 |
| 1,2,3,4,7,8-Hexa CDF | 0.0625 | 0.04315 | 0.02295 | 0.00585 | 0.1 | 0.683 | 0.005 | 0.27 | 0.0095 | 0.176 | 0.01085 |
| 1,2,3,6,7,8-Hexa CDF | 0.0232 | 0.0685 | 0.01735 | 0.00555 | 0.02595 | 0.329 | 0.00498 | 0.134 | 0.0101 | 0.094 | 0.0114 |
| 2,3,4,6,7,8-Hexa CDF | 0.0521 | 0.0574 | 0.022 | 0.0056 | 0.02065 | 0.505 | 0.0052 | 0.167 | 0.0098 | 0.106 | 0.01145 |
| 1,2,3,7,8,9-Hexa CDF | 0.00615 | 0.00975 | 0.0061 | 0.0071 | 0.0339 | 0.457 | 0.00645 | 0.03455 | 0.0128 | 0.04825 | 0.01465 |
| 1,2,3,4,6,7,8-Hepta CDF | 0.026 | 0.0169 | 0.0369 | 0.0151 | 0.112 | 0.645 | 0.000815 | 0.521 | 0.003285 | 0.227 | 0.00368 |
| 1,2,3,4,7,8,9-Hepta CDF | 0.000615 | 0.0006 | 0.00095 | 0.00094 | 0.00094 | 0.0504 | 0.00106 | 0.0496 | 0.00118 | 0.0199 | 0.00087 |
| Octa CDF | 0.000801 | 0.000504 | 0.000702 | 0.001323 | 0.00528 | 0.02019 | 0.00006225 | 0.0759 | 0.0002703 | 0.02073 | 0.00014265 |
| **Total TCDD Eqs.** | 1.07 | 1.827 | 1.05 | 0.432 | 2.7 | 29.40 | 0.303 | 9.188 | 0.400 | 4.706 | 0.310 |

**Table 4**
**DISPOSAL TOTALS**
**Former Agricultural Park, Riverside, California**

| Material | Azusa Land Reclamation Azusa, CA (tons) | Haven Diversion Ontario, CA (tons) | Puente Hills Landfill City of Industry, CA (tons) | Nu-Way Arrow Land Reclamation Irwindale, CA (tons) |
|---|---|---|---|---|
| PCB-Impacted Soil | 165,226.64 | | | |
| Clean Soil from Inside Excavation Area | | | 14,436 | 16,346 |
| Concrete | 4,481.37 | | | |
| Asbestos-Cement Pipe | 50.82 | | | |
| Green Waste | | 422.26 | | |

**FIGURES**




N

0 1/4 1/2 3/4 1 MILE

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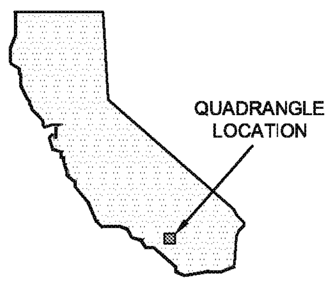


SOURCE:

United States Geological Survey
7.5 Minute Topographic Map:
Riverside West Quadrangle

| | | |
|---|---|---|
| TRC | FACILITY: FRIENDS OF THE RIVERSIDE AIRPORT, LLC 7020 CREST AVENUE RIVERSIDE, CALIFORNIA | VICINITY MAP |
| | | FIGURE 1 |

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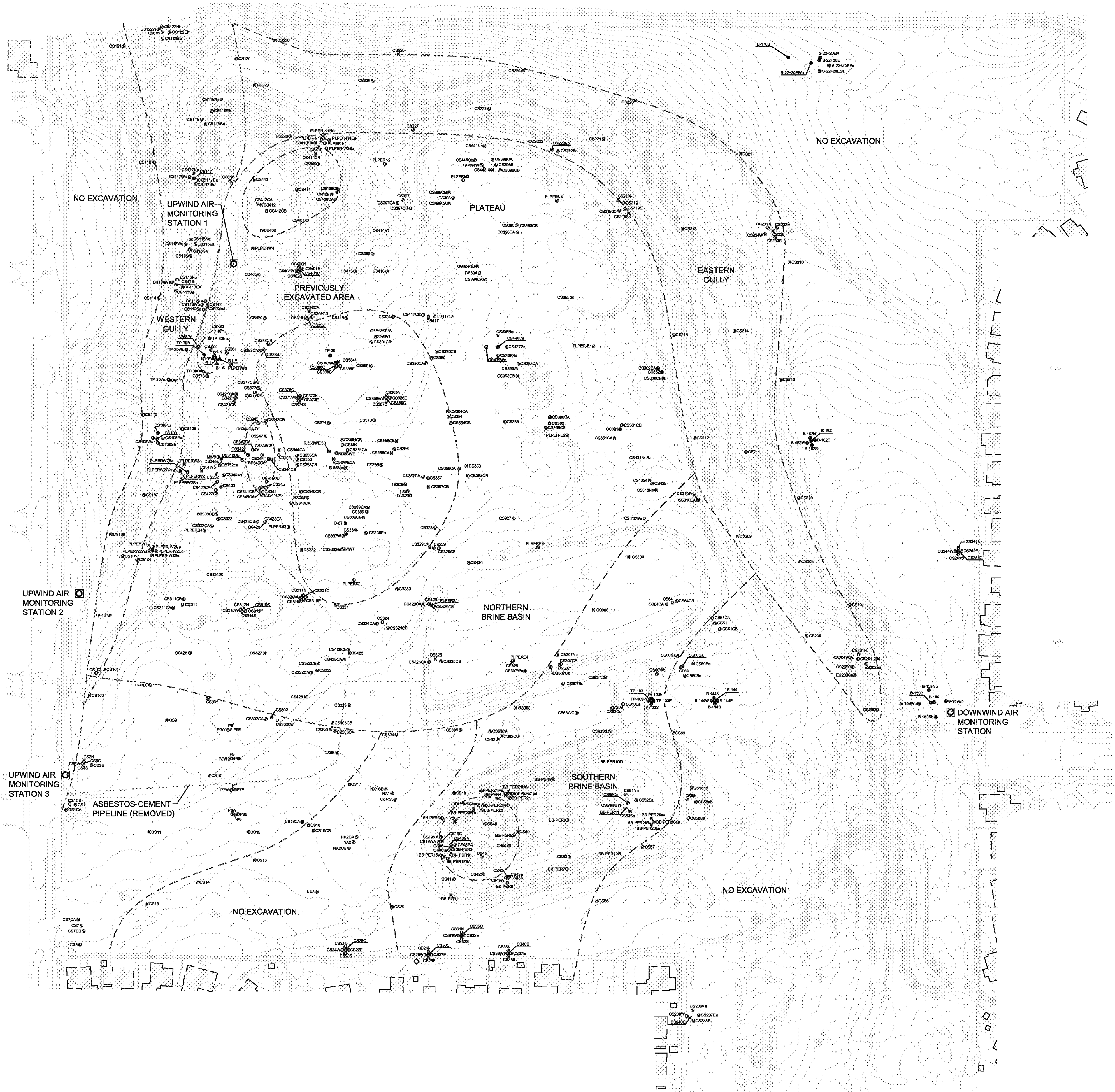
LEGEND

132 PCB Sample Location

B-159 Dioxin/Furan Sample Location

Air Monitoring Station




SCALE (FEET)

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TRC

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FACILITY:

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7020 CREST AVENUE
RIVERSIDE, CALIFORNIA

SITE PLAN

FIGURE 2

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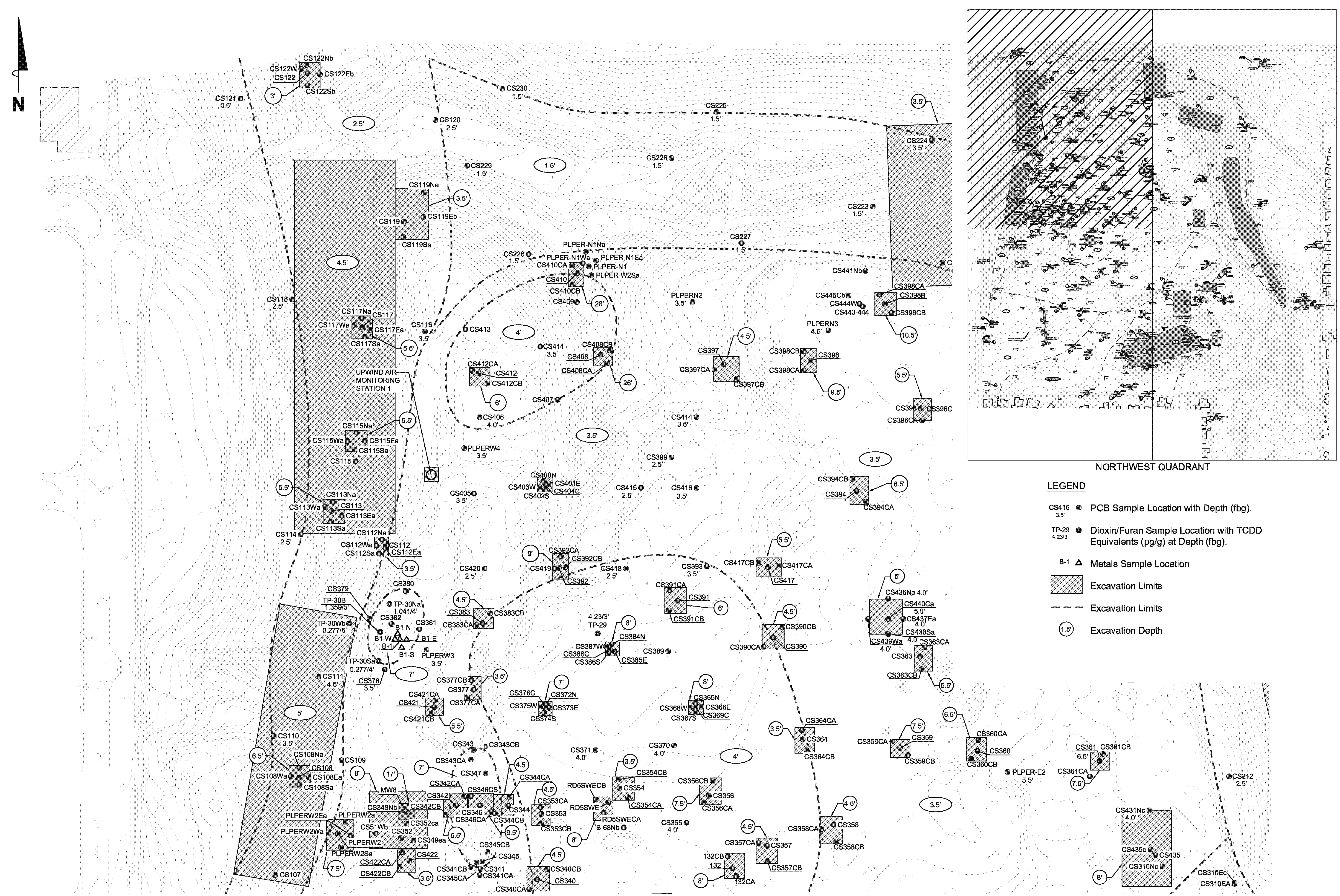


## LEGEND

| | |
|---|---|
| CS416 ● 3.5' | PCB Sample Location with Depth (fbg). |
| TP-29 ⊙ 4.23/3' | Dioxin/Furan Sample Location with TCDD Equivalents (pg/g) at Depth (fbg). |
| B-1 △ | Metals Sample Location |
| (hatched box) | Excavation Limits |
| — — — | Excavation Limits |
| (1.5') | Excavation Depth |

NOTES:

PCB = Polychlorinated biphenyls.
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
ND = not detected at limit indicated on official laboratory report.
TCDD = 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin.

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SCALE (FEET)
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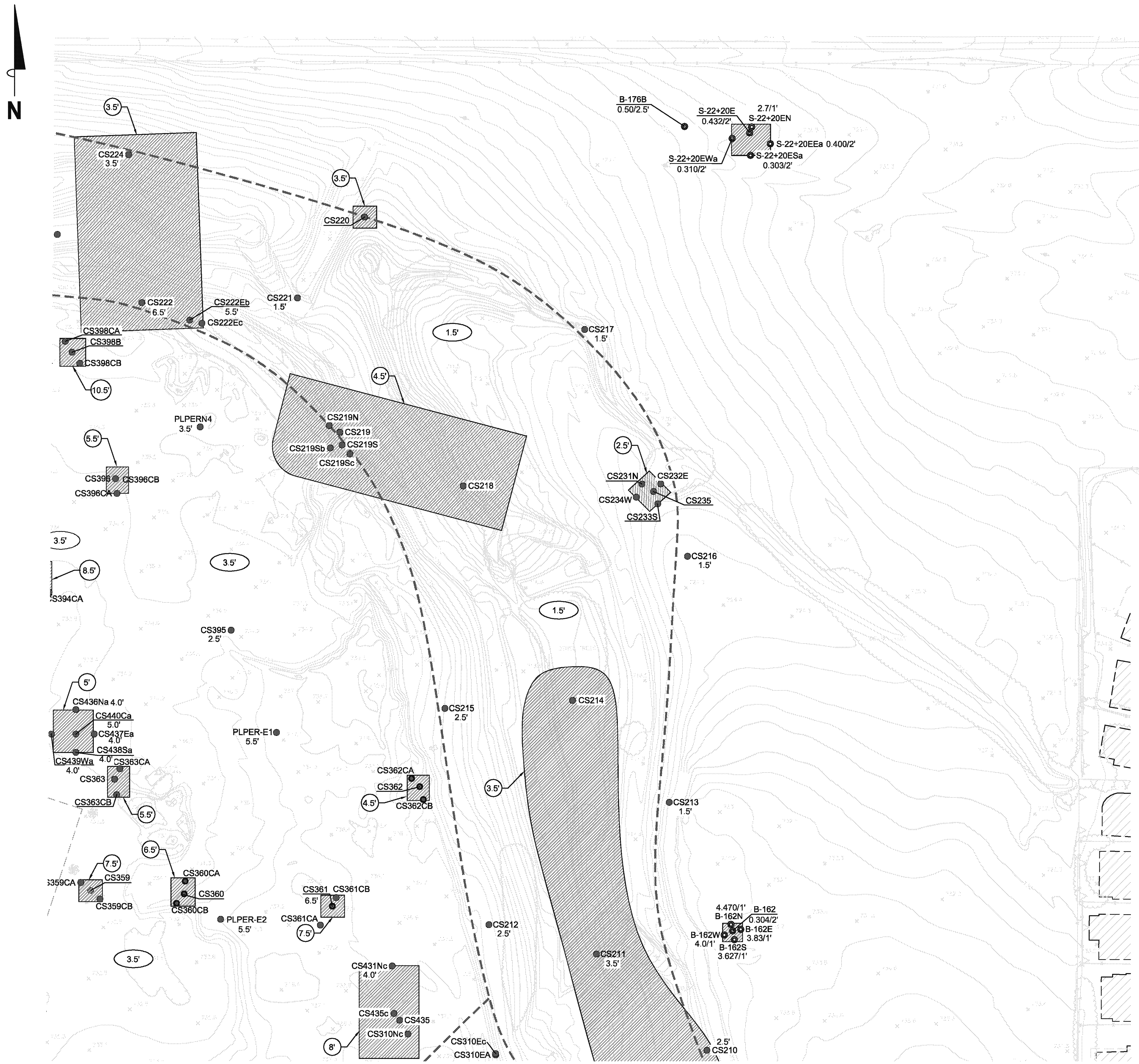
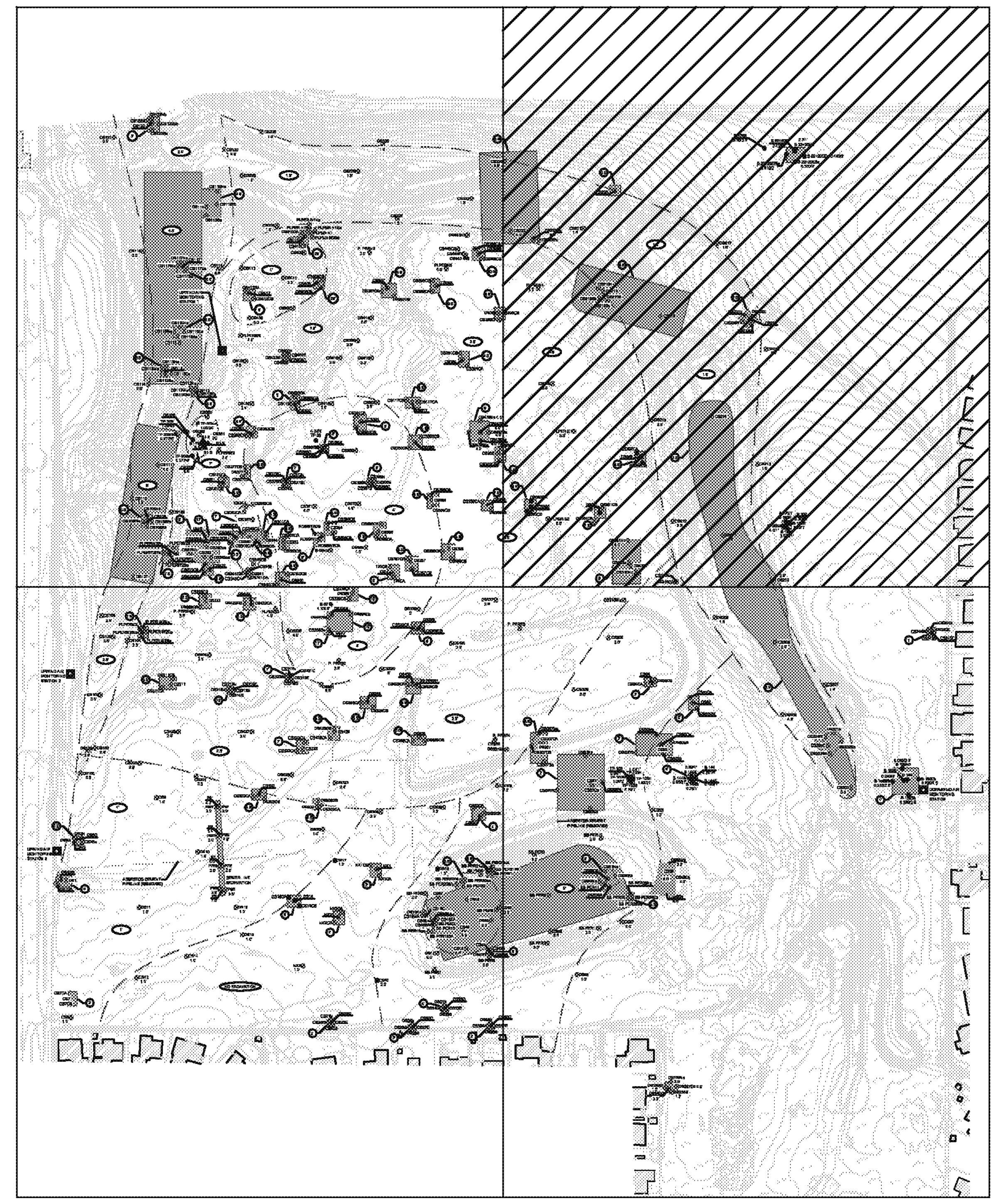
**SOIL SAMPLE LOCATION MAP**
**NORTHWEST QUADRANT**

**FIGURE 3**



NORTHEAST QUADRANT

LEGEND

| | |
|---|---|
| CS216 1.5' ● | PCB Sample Location with Depth (fbg). |
| B-162 0.304/2' ⊙ | Dioxin/Furan Sample Location with TCDD Equivalents (pg/g) at Depth (fbg). |
| (hatched box) | Excavation Limits |
| — — — | Excavation Limits |
| (1.5') | Excavation Depth |

NOTES:

PCB = Polychlorinated biphenyls.
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
ND = not detected at limit indicated on official laboratory report.
TCDD = 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin.

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SCALE (FEET)
0 60

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FACILITY:
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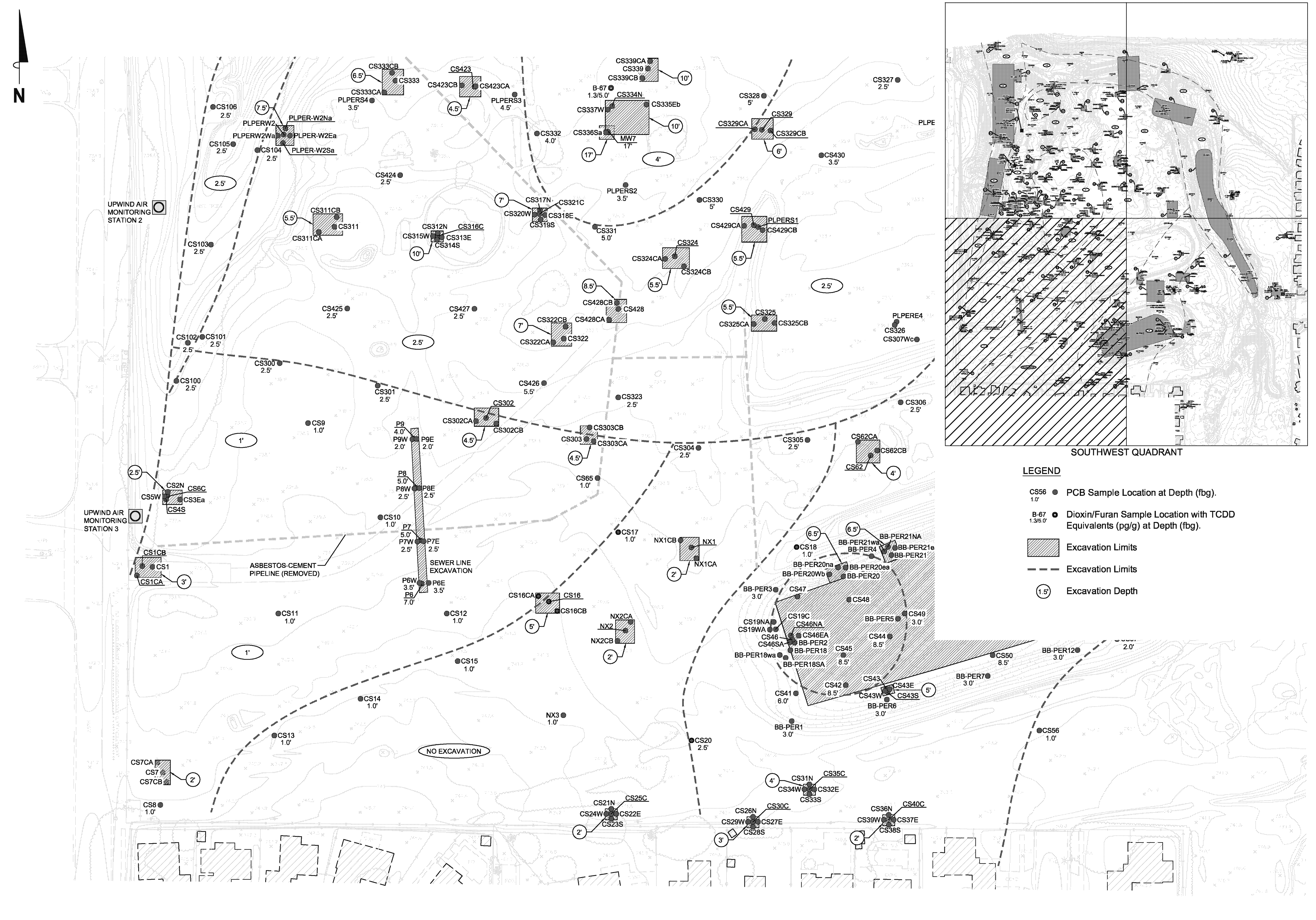
7020 CREST AVENUE
RIVERSIDE, CALIFORNIA

SOIL SAMPLE LOCATION MAP
NORTHEAST QUADRANT

FIGURE 4




NOTES:

PCB = Polychlorinated biphenyls.
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
TCDD = 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin.

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SCALE (FEET)
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TRC

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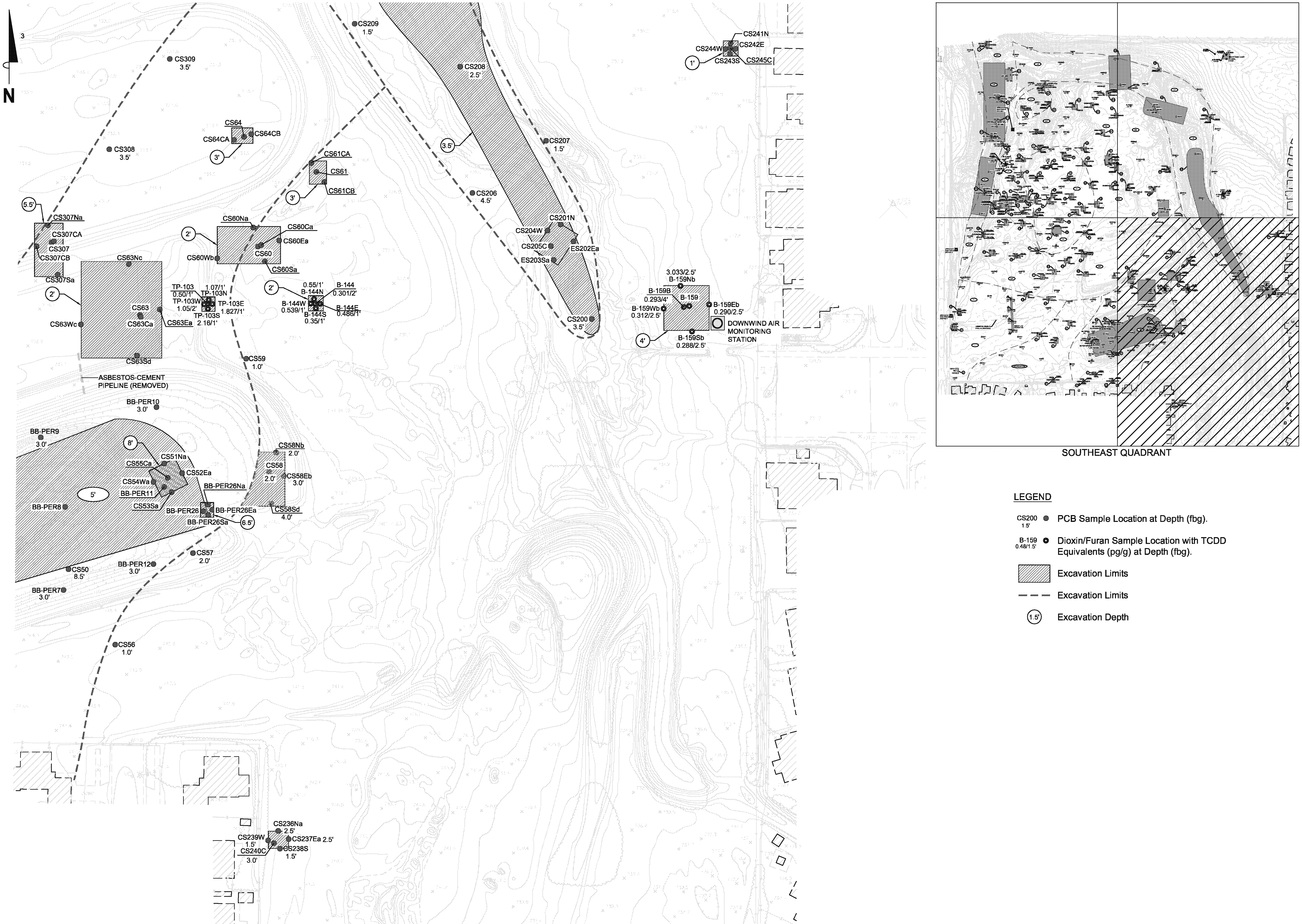
RIVERSIDE, CALIFORNIA

**SOIL SAMPLE LOCATION MAP**
**SOUTHWEST QUADRANT**

**FIGURE 5**




## LEGEND

| | |
|---|---|
| CS200 1.5' ● | PCB Sample Location at Depth (fbg). |
| B-159 0.48/1.5' ⊙ | Dioxin/Furan Sample Location with TCDD Equivalents (pg/g) at Depth (fbg). |
| (hatched box) | Excavation Limits |
| – – – | Excavation Limits |
| (1.5') | Excavation Depth |

NOTES:
PCB = Polychlorinated biphenyls.
mg/kg = milligrams per kilogram.
pg/g = picograms per gram.
TCDD = 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin.

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TRC

PROJECT: 167991

FACILITY:
FORMER AGRICULTURAL PARK
7020 CREST AVENUE
RIVERSIDE, CALIFORNIA

**SOIL SAMPLE LOCATION MAP SOUTHEAST QUADRANT**

**FIGURE 6**